# Chapter 30
# Growth Inducement

[*Note to reviewers: the data and figures presented in this chapter are currently under revision based on updated project alternatives information and GIS data. Please review this chapter with a focus on the format, structure, and impact conclusions at this time. Subsequent versions of this chapter will provide the updated data and figures.*]

This chapter addresses the growth inducement potential of the BDCP alternatives. Assessing growth inducement potential involves determining whether project implementation would directly or indirectly support economic expansion, population growth, or residential construction, and if so, determining the magnitude and nature, and potential environmental effects of that growth. One of the objectives of the BDCP is to increase the reliability of the water supplied by the State Water Project (SWP) and the Central Valley Project (CVP). Water supply is one of the primary public services needed to support urban development. A water service deficiency could constrain future development in the state of California, particularly if coupled with policies that constrain growth relative to water supply. Adequate water supply, treatment, and conveyance would play a role in supporting additional growth in areas dependent on this water supply, but it would not be the single impetus behind such growth. Other important factors influencing growth are: economic factors (such as employment base); capacity of public services and infrastructure (e.g., wastewater, public schools, roadways); local land use policies; and land use constraints such as floodplains, sensitive habitat areas, and seismic risk zones.

## 30.1 Environmental Setting/Affected Environment

### 30.1.1 Relationship between Land Use Planning and Water Supply

In California, cities and counties have primary authority[1] over land use decisions, while water supply can be the responsibility of special districts, county water agencies, investor-owned utilities, mutual water companies and, in some cases, the city and county governments themselves. SWP and CVP contractors that provide water in the state include these same types of agencies. Many SWP and CVP contractors also act as wholesalers of water to the retail agencies that provide water to municipal and industrial (M&I) customers throughout California. Land use planners throughout the state employ various procedures and practices based upon legal and contractual requirements to evaluate whether adequate water and other utilities are available to support urban growth.

[1] Although cities and counties have primary authority over land use planning, there are exceptions to this, including the California Coastal Commission (regulating development along the coast), the San Francisco Bay Conservation and Development Commission (a regional agency regulating development adjacent to San Francisco Bay), the Tahoe Regional Planning Authority (regulating development in the Tahoe Basin), the California Energy Commission (with permit authority and CEQA lead agency status for some thermal power plant projects), and the California Public Utilities Commission (with regulatory authority and CEQA lead agency status for certain utility projects).

This section describes the laws, agencies, guidelines, and publications that provide the regulatory and planning framework for the coordination of land use planning and water supply management and planning in the state. The analysis of the project's growth inducement potential is made in the context of these regulations and regulatory strategies that integrate land use planning and development decisions and water management planning activities.

This section summarizes some key regional and local agencies, laws, and planning documents that guide development decisions. Information is presented that highlights the integration of land use planning and water supply availability. For further information on the regulatory context for land use and planning, refer to Chapter 13, *Land Use*.

### 30.1.1.1 Regional Planning

Councils of Government (COGs) have been formed throughout the state, based on joint powers agreements between cities and counties, to coordinate the planning activities within a region. In addition to the authority that is created through their member cities and counties, COGs carry out state and federal statutory duties. The exact combination of duties varies from region to region. In general, COGs do not have public service delivery responsibility (e.g., water supply, wastewater, etc.). However, while these regional planning agencies are not directly involved with water supply planning, COGs do direct regional growth decisions by setting state-mandated fair-share regional housing allocations for cities and counties in their jurisdictions. While most COGs are single-county organizations, several cover multi-county regions, including: the Southern California Association of Governments (SCAG), the Association of Bay Area Governments (ABAG), the Metropolitan Transportation Commission (MTC), the Sacramento Area Councils of Governments (SACOG), and the Association of Monterey Bay Area Governments (AMBAG).

Table 30-1 identifies the COGs and member counties located in the DWR hydrologic regions where SWP or CVP water is used.

### 30.1.1.2 Local Planning

Pursuant to state law, each city and county in California is required to adopt a comprehensive, long-term general plan for the physical development of its jurisdiction. The general plan is a statement of development policies and is required to include land use, circulation, housing, conservation, open space, noise, and safety elements. The land use element designates the proposed general distribution, location, and extent of land uses and includes a statement of the standards of population density and building intensity recommended for lands covered by the plan. Water resource topics, including water supply, are identified in the statutes as topics to be addressed in general plan conservation and/or open space elements. Policies are developed which connect the management of water resources and provision of water supply infrastructure with development patterns. The conservation element addresses the conservation, development, and use of water and other natural resources. The water section of the conservation element must be developed in coordination with any county-wide water agency and with all districts and city agencies that have developed, service, controlled, managed, or conserved water of any type for any purpose in the city or county for which the general plan is prepared. Such coordination must include the discussion and evaluation of any water supply and demand information provided pursuant to California Government Code Section 65352.5. An EIR prepared in conjunction with a general plan typically provides some assessment of the adequacy of water supply to accommodate development and population growth projected under the general plan.

With respect to planning development to accommodate housing growth, the State Planning and Zoning law prescribes that the housing element of a general plan may not be constrained by the lack of all needed governmental services, including public water service. The housing element is required to plan for the housing allocated to a given city or county pursuant to Government Code Section 65584. To the extent that governmental services, like a public water supply, are not available to fully meet a city's or county's housing allocation, Government Code Section 65583(c)(3) requires the city or county to "remove the governmental constraints" to the development of the housing described in the General Plan. This requirement promotes the state general plan policy that "the availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every California family is a priority of the highest order" that "requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels" (Government Code Section 65580). Although future build-out of housing and other population-accommodating development planned in a general plan may exceed presently available water supplies, this is not inappropriate at a general plan level and recent state legislation (Senate Bill [SB] 610 and SB 221, discussed below), ensure that specific housing and other development projects are not approved and constructed without a demonstrated, adequate water supply.

In addition to adoption and use of a general plan, city and county planning agencies also use locally adopted zoning ordinances, subdivision ordinances, and development regulations (prepared in accordance with applicable state laws) to implement the general plan and regulate growth within their jurisdictions. See Chapter 13, *Land Use*, for further discussion of general plans applicable to the proposed project.

**Table 30-1. Councils of Government in Hydrologic Regions Potentially Affected by the Proposed Project**

| Hydrologic Regions with SWP and/or CVP Contractors | Councils of Government within Hydrologic Region[a] | Counties within Hydrologic Region[b] |
|---|---|---|
| San Francisco Bay | *Association of Bay Area Governments*[c] | *Alameda, Contra Costa, Marin, Napa*, San Francisco, San Mateo, *Santa Clara, Solano,* and *Sonoma* |
| Sacramento River | Siskiyou Association of Governmental Entities | Siskiyou |
| | Tri-County Area Planning Council | Colusa, *Glenn,* and Tehama |
| | Butte Association of Governments | Butte |
| | Lake County/City Area Planning Council | *Lake* |
| | *Sierra Planning Organization and Economic Development District* | *El Dorado, Nevada,* Placer, and *Sierra* |
| | *Central Sierra Planning Council and Economic Development District* | *Alpine* and Amador |
| | *Association of Bay Area Governments* | *Napa and* Solano |
| | *Sacramento Area COG* | *Sacramento*, Sutter, Yolo, and Yuba |
| San Joaquin River | *Association of Bay Area Governments* | *Contra Costa* |
| | *Sacramento Area COG* | *Sacramento* |

| Hydrologic Regions with SWP and/or CVP Contractors | Councils of Government within Hydrologic Region[a] | Counties within Hydrologic Region[b] |
|---|---|---|
| | *Sierra Planning Organization and Economic Development District* | *El Dorado* |
| | *Central Sierra Planning Council and Economic Development District* | *Alpine,* Amador, Calaveras, and Tuolumne |
| | San Joaquin COG | San Joaquin |
| | Calaveras COG | Calaveras |
| | Stanislaus COG | Stanislaus |
| | Merced County Association of Governments | Merced |
| | *Council of Fresno County Governments* | *Fresno* |
| Central Coast | Association of Monterey Bay Area Governments | Monterey and Santa Cruz |
| | *Association of Bay Area Governments* | *Santa Clara* |
| | *Council of San Benito County Governments* | *San Benito* |
| | San Luis Obispo COG | San Luis Obispo |
| | Santa Barbara County Association of Governments | Santa Barbara |
| | *Southern California Association of Governments*[d] | *Ventura* |
| South Coast | *San Diego Association of Governments* | *San Diego* |
| | *Southern California Association of Governments* | *Los Angeles,* Orange, *Riverside, San Bernardino,* and *Ventura* |
| Tulare Lake | *Council of San Benito County Governments* | *San Benito* |
| | *Council of Fresno County Governments* | *Fresno* |
| | Kings County Association of Governments | Kings |
| | Tulare County Association of Governments | Tulare |
| | *Kern Council of Governments* | *Kern* |
| South Lahontan | Eastern Sierra COG | Inyo and *Mono* |
| | *Kern COG* | *Kern* |
| | *Southern California Association of Governments* | *Los Angeles* and *San Bernardino* |
| Colorado River | *San Diego Association of Governments* | *San Diego* |
| | *Southern California Association of Governments* | Imperial, *Riverside,* and *San Bernardino* |

| Hydrologic Regions with SWP and/or CVP Contractors | Councils of Government within Hydrologic Region[a] | Counties within Hydrologic Region[b] |
|---|---|---|

Source: ESA 2009.

[a] COGs in multiple hydrologic regions in *italics*.

[b] Counties listed are only counties that fall within the hydrologic region and may not be a complete list of counties represented in the COG; counties in *italics* are in multiple hydrologic regions.

[c] Association of Bay Area Governments consists of the following counties: Sonoma, Napa, Marin, Solano, Contra Costa, San Francisco, Alameda, San Mateo, and Santa Clara.

[d] Southern California Association of Governments consists of the following counties: Ventura, Los Angeles, San Bernardino, Orange, Riverside, and Imperial.

Most general plans are typically organized only by seven required elements; however, in 2003, the California Governor's Office of Planning and Research published new guidelines for cities and counties to use in developing their general plans that encouraged local jurisdictions to include in their general plans an optional water element to integrate a more thorough consideration of water supply availability into general plans and subsequent development decisions. The water element should be developed in conjunction with the appropriate water supply and resource agencies. Cities and counties have used this and other optional elements to focus their general plans on other locally significant or critical resource areas. As of December, 2009, 20 of California's 58 counties and 53 of the state's 482 cities and towns had adopted optional water resources elements in their general plans, compared, for example, with 32 counties and 24 cities that adopted optional agricultural elements in their general plans.[2]

To provide for better coordination of local land use planning, the California Legislature created Local Agency Formation Commissions (LAFCOs) within each county to discourage urban sprawl and to preserve open space and agricultural lands while meeting regional housing needs and planning for the efficient provision of public services and utilities, including water supply. LAFCOs have approval authority over the establishment and expansion of municipal and service district boundaries, including expansion related to a city proposing to expand its sphere of influence. With some limits, LAFCOs evaluate, through the preparation of Municipal Service Reviews, an agency's ability to provide services (including water supply) prior to annexing additional areas.

### 30.1.1.3 Water Supply Management and Planning

The California Water Code establishes the governing law pertaining to water management and planning in California. The Water Code establishes DWR as the primary research and supply development and management agency. The following summarizes information that DWR and Reclamation provide their contractors to assist in managing the water supply provided by the SWP and CVP, respectively.

#### California Department of Water Resources —State Water Project

Through regular publications and communications, DWR provides SWP and other water-related information to the SWP contractors and the public (including local decision-makers). The Water Code requires that DWR prepare and update the California Water Plan (Bulletin 160), a policy

[2] Governor's Office of Planning and Research, "The California Planners Book of Lists - 2010," (2009).

document that guides the development and management of the state's water resources (California Water Code Section 10004 (b)). DWR updates the plan every 5 years to reflect changes in resources and changes in urban, agricultural, and environmental water demands. It suggests ways of managing demand and augmenting supply to balance water supply with demand. In addition to Bulletin 160, DWR publishes an annual bulletin (Bulletin 132) that provides information on the planning, construction, financing, management, and operations of the SWP. DWR annually notifies and updates its SWP contractors on the amount of "Table A" water[3] available for delivery in the coming year. DWR also posts water availability information on its website. The notices are provided so that SWP contractors, other water agencies, local planners, and the public are informed of water conditions and events that affect deliveries by the SWP (DWR 2011).

DWR also publishes the State Water Project Delivery Reliability Report, updated every 2 years, which is distributed to all SWP contractors and all city, county, and regional planning departments within the SWP service areas. The purpose of the report is to provide current information to SWP contractors and planning agencies regarding the overall delivery capability of existing SWP facilities under a range of hydrologic conditions, and to provide information regarding supply availability to each contractor in accordance with other provisions of the contractors' contracts.

For further information on the operation of the SWP, refer to Chapter 5, Water Supply.

## Bureau of Reclamation—Central Valley Project

Reclamation manages the CVP pursuant to the Reclamation Act of 1902 and subsequent amendments, including the Central Valley Project Improvement Act (CVPIA) of 1992. The CVPIA added fish, wildlife, and habitat restoration/protection as project purposes having equal priority to projects providing irrigation, domestic water supply, and power generation. Reclamation is working with the U.S. Fish and Wildlife Service (USFWS) to plan and implement fish recovery programs, and is working with DWR and other agencies and organizations to address operational changes to the CVP. Operation of the CVP is closely tied to the SWP, and frequent water transfers take place between CVP and SWP contractors. In the spring of each year, Reclamation publishes notices on CVP water supply allocations that estimate the amount of contracted water that will be supplied to contractors through the year, based on the amount of precipitation received in the region and the water levels in the system's storage reservoirs.

For further information on the operation of the CVP, refer to Chapter 5, Water Supply.

## 2009 Delta/Water Policy Bills

In response to special legislative session called by Governor Schwarzenegger to address the state's water crisis, on November 4, 2009, the California Legislature passed a package of bills intended to reform California's water system and water policies. The water package is comprised of the four policy bills and an $11.14 billion bond, which are described below.

- SB 7X 1 (Simitian and Steinberg) establishes a framework intended to achieve the co-equal goals of providing a more reliable water supply in California and protecting, restoring and enhancing the Delta ecosystem. The co-equal goals are to be achieved in a manner that protects the unique cultural, recreational, natural resource, and agricultural values of the Delta. SB 7X 1 specifically:

[3] "Table A" water is the maximum amount of water delivered to each contractor if water is available and if the contractor requests its full allotment.

- Creates a seven member Delta Stewardship Council tasked with developing a Delta Plan to guide state and local actions in the delta in a manner that furthers the co-equal goals of delta restoration and water supply; developing performance measures for the assessment and tracking of progress and changes to the health of the Delta ecosystem and water supply reliability; determining if a state or local agency's project in the Delta is consistent with the Delta Plan and the co-equal goals; and acting as an appellate body in the event of a claim that a project is inconsistent with the goals.
- Requires the California Department of Fish and Game and the State Water Resources Control Board (SWRCB) to identify the water supply needs of the Delta estuary for use in determining the appropriate diversion amounts associated with the BDCP.
- Establishes a Delta Conservancy to implement ecosystem restoration activities within the Delta. In addition to restoration duties, the Conservancy is required to adopt a strategic plan for implementation of the Conservancy goals; promote economic vitality in the Delta; promote environmental education about the Delta; assist in the preservation, conservation, and restoration of the Delta region's agricultural, cultural, historic, and living resources.
- Restructures the current Delta Protection Commission (DPC) by reducing the membership from 25 to 15 and requiring the DPC to adopt an economic sustainability plan for the Delta.
- Appropriates funding from Proposition 84 to fund the Two-Gates Fish Protection Demonstration Program.

- SB 7X 6 (Steinberg and Pavely) requires local agencies to monitor groundwater elevations to help better manage groundwater resources.
- SB 7X 7 (Steinberg) creates a framework to reduce California's per capita water consumption 20% by 2020. Specifically, the bill:
  - Establishes means for urban water suppliers to achieve the 20%reduction. Means specified include: setting a conservation target of 70% of their daily per capita water baseline; utilizing performance standards for indoor, landscaping, industrial and institutional uses; meeting the per capita water goal for their specific hydrologic region as identified by DWR and other state agencies in the 20%by 2020 Water Conservation Plan; or using an alternative method that was to be developed by DWR by December 31, 2010. SB 7X 7 also requires DWR to work cooperatively with the California Urban Water Conservation Council.
  - Requires urban water suppliers to set an interim urban water use target and meet that target by December 31, 2015.
  - Requires DWR to work cooperatively with the California Urban Water Conservation Council to establish a task force to identify best management practices to assist commercial, industrial, and institutional users in meeting the 20% reduction in water use by 2020 goal.
  - Makes any urban or agricultural water supplier who is not in compliance with the bill's water conservation and efficient water management requirements ineligible for state grant funding.
  - Requires DWR to report to the Legislature on agricultural efficient management practices being undertaken and reported in agricultural water management plans in 2013, 2016, and 2021.
  - Requires DWR SWRCB, and other state agencies to develop a standardized reporting system.

- SB 7X 8 (Steinberg) strengthens current law governing the accounting and reporting of water diversion and uses by adding penalties for failure to report and removing some exemptions from reporting requirements. In addition, the bill appropriates existing bond funds for various activities to benefit the Delta ecosystem and secure the reliability of the state's water supply and to increase staffing of the SWRCB.

## Coordination of Land Use Planning and Water Supply

As discussed previously, laws and planning documents that guide development decisions provide some integration of land use planning and water supply availability. The following summarizes legislative efforts and initiatives that are intended to strengthen the coordination of land use and water planning activities. In addition to the legislative efforts described below, certain elements of the 2009 Delta/Water Policy Bills (described below) are designed to integrate land use planning and water supply.

### Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Planning Act (California Water Code Section 10631). The Act requires every urban water supplier that provides water to 3,000 or more customers or provides over 3,000 acre-feet of water annually to prepare and adopt an urban water management plan (UWMP) (updated every 5 years) for the purpose of "actively pursu[ing] the efficient use of available supply." In preparing the UWMP, the urban water supplier is required to coordinate with other appropriate agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies. When a city or county proposes to adopt or substantially amend a general plan, the water agency is required to provide the planning agency with the current version of the adopted UWMP, the current version of the water agency's capital improvement program or plan, and other information about the system's sources of water supply. The Urban Water Management Planning Act also requires urban water suppliers, as part of their long-range planning activities, to make every effort to ensure the appropriate level of reliability in their water service sufficient to meet the needs of their various categories of customers during normal, dry, and multiple dry water years.

The Urban Water Management Planning Act recognizes that water is a limited and renewable resource subject to increasing demands and that conservation and efficient use of urban water supplies is a statewide concern. By directing urban water suppliers to prepare UWMPs, the Legislature established a clear policy direction for local water agencies to actively pursue conservation and efficient use of water.

### Senate Bills 610 and 221

SB 610 and SB 221 are companion legislative measures that took effect in January 2002 and require increased efforts to identify and assess the reliability of anticipated water supplies and increased levels of communication between municipal planning authorities and local water suppliers.

- SB 610 requires that CEQA review for most large projects and specified smaller projects (including those that generate water demand greater than an equivalent of 500 dwelling units, or increase service connections by 10%) to include a water supply assessment. The water supply assessment must address whether existing water supplies will suffice to serve the project and other planned development over a 20-year period in average, dry, and multiple-dry year conditions, and must set forth a plan for finding additional supplies necessary to serve the

project. Cities and counties can approve projects notwithstanding identified water supply shortfalls provided that they address such shortfalls in their findings.

- SB 221 requires that cities and counties impose a new condition of tentative subdivision approval, requiring that the applicant provide a detailed, written verification from the applicable water supplier that a sufficient water supply will be available before the final subdivision map can be approved. It applies to similar sized projects as those addressed in SB 610.

#### State Policies Encouraging Compact and Sustainable Development

Several recent laws have sought to refocus planning efforts to reduce sprawl, preserve farmland, increase the viability of public transportation, and reduce the emission of greenhouse gases. These efforts promote compact and sustainable development, which allow for the more efficient provision of public services and reduce the consumption of resources, including water supply. Sustainable development includes the concepts of more efficient water use, including incorporation of water conservation and efficiency measures such as use of recycled water, water efficient fixtures, and drought tolerant landscaping.

- Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, adopted the goal of reducing greenhouse gas emissions to 1990 levels by the year 2020. The plan identifies measures to reduce the energy requirements associated with providing reliable water supplies (i.e. , water treatment and distribution facilities). These measures include increased water use efficiency and water recycling, and increasing water system energy efficiency.
- SB 375 was adopted in 2008 to require COGs to align their housing and transportation plans and to develop a "sustainable community's strategy" that will reduce sprawl and improve air and water quality.
- SB 732 was signed into law in 2008 and establishes the Strategic Growth Council, a cabinet-level committee that is tasked with coordinating the activities of state agencies to improve air and water quality, protect natural resources, and assist in the planning of sustainable communities.
- AB 857, adopted in 2002, established three planning priorities for the state—promoting infill development, protecting natural resources, and encouraging efficient development patterns. These priorities are to be incorporated into the Governor's Goals and Policy Report that provides a 20–30 year overview of state growth and development, and guides the commitment of state resources in agency plans and infrastructure projects.
- The Regional Blueprint Planning Program is a grant program operated by the California Department of Transportation that provides assistance to COGs in developing long-range plans with the intent of supporting greater transit use, encouraging more efficient land use, improving air quality, and protecting natural resources.

## 30.1.2 Statewide Urban Land Use and Water Use Profile

Major sources of the information presented in this section include California Department of Finance (DOF) demographic data, California Water Plan Update 2005 (Bulletin 160-05), California Water Plan Update 2009 (Draft Bulletin 160-09), urban water management plans for select SWP and CVP contractors, and DWR.

### 30.1.2.1 Urban Land Use

California is the most populous state in the United States. As shown in Figure 30-2 [Note to reviewers: we intend to place this figure and all subsequent figures comparing 1990 and 2010 population density in an appendix], the majority of the state's population lives in Southern California. More specifically, population distribution is clustered in the southwestern portion of the state (Ventura, Los Angeles, Orange, San Diego, western San Bernardino, and Riverside Counties); in the nine counties surrounding San Francisco Bay (Sonoma, Napa, Marin, Solano, Contra Costa, San Francisco, Alameda, San Mateo, and Santa Clara); and in the Central Valley along the Interstate 5, State Route 99, and Interstate 80 corridors (Sacramento, San Joaquin, Stanislaus, Merced, Fresno, El Dorado, and Placer). The DOF Demographic Research Unit collects and compiles population data for the state. According to DOF data (as reported in DWR 2009), California's population increased from approximately 30 million in 1990 to approximately 36.7 million in 2005. The DOF projects that the state's population will be approximately 47 million by the year 2025 and 60 million by 2050 (DOF 2007a). DWR uses state demographic data in statewide water management planning to help calculate current and projected urban water needs.

Economic growth is a key driver of urban development and water use. Although California has the largest and most diverse economy in the nation, sectors of the economy have contracted as a result of the current economic recession and there are increased uncertainties regarding future development patterns. In addition, factors affecting water supply availability and reliability (such as climate change, water supply shortages, water quality concerns, flood management, and environmental protection regulations) add to future development pattern uncertainties. While long-term projects generally do not account for changing economic conditions, it is likely that actual growth in the state could occur more slowly or in different patterns than characterized in the projections presented in this chapter in response to economic conditions and water supply reliability and availability factors.

### 30.1.2.2 Water Use

Water consumption patterns vary from year to year based on a variety of factors, including changes in rainfall/climatic conditions (e.g., in wet years outdoor water demand is lower because rainfall directly meets a portion of water needs; during dry years, outdoor water demand is generally greater, although conservation initiatives or rationing, if implemented, may moderate outdoor water use), land use patterns and demographics, water use practices (e.g., increases in urban conservation and irrigation efficiencies), and agricultural practices (e.g., conversion from more water-intensive crops to less water-intensive crops or vice versa). Table 30-2 summarizes the average distribution of water supplies to various applied uses (e.g., urban, agricultural, and environmental uses) for the state for the years 1998 through 2005, based on data collected by DWR (DWR 2010a). This period includes wet, normal, and dry years. As shown in Table 30-2, during this time period, on average, urban uses represented 10.5 % of the demand of water distributed in the state, agricultural uses represented 39.9 % of the demand for water distributed in the state, and environmental water (including instream flows, wild and scenic river flows, required Delta outflow, and other dedicated uses) represented about 49.6 % of water distributed in the state.

**Table 30-2. Statewide Distribution of Dedicated Water Supply to Applied Water[a] Uses**

| | Total Demand and Percent Total Demand, 8-Year Average (1998–2005) | |
|---|---|---|
| | Million Acre-Feet | Percent of Total Dedicated Water (%) |
| Urban Uses | 8.8 | 10.5 |
| Agricultural Uses | 33.2 | 39.9 |
| Environmental Uses[b] | 41.4 | 49.6 |
| Total Dedicated Supply | 83.3 | 100 |

Source: DWR 2010a, adapted by ESA

[a] Applied water refers to the total amount of water diverted from any source to meet the demands for beneficial use by water users (dedicated water uses), without adjusting for water that is consumptively used, becomes return flow, is reused, or is irrecoverable.

[b] Environmental uses include instream flows, wild and scenic flows, required Delta outflow, and managed wetlands water use. Some environmental water is reused by agricultural and urban water users.

Overall, urban water use efficiency in California has increased over the past several decades and will continue to increase in the future. As a result, increases in population have not always translated into a proportionate increase in water use. Currently, California is experiencing reduced water availability due to the effects of dry years in 2007, 2008, and (for portions of the state) 2009, along with court-ordered reductions in pumping to protect Delta fisheries. Demand management strategies in response to the drought and decreases in economic production attributable to the recession have lowered demand, and in 2008, Governor Schwarzenegger directed state agencies to develop an aggressive conservation plan to reduce per capita consumption by 20 %. As described previously, the 2009 Delta/Water Policy Bills, which the California Legislature passed in special session in response to the Governor's Proclamation, include provisions to help the state achieve the 20 % reduction in per capita consumption by 2020. The bills include several far-reaching provisions intended to reform state water policy to ensure a reliable water supply and restore the Delta and other ecologically sensitive areas.

Chapter 5, *Water Supply*, provides more information on changing water use patterns in California.

## 30.1.3 Urban Land Use and Water Use by Hydrologic Region

For planning purposes, DWR divides the state into 10 hydrologic regions, corresponding to the major water drainage basins.[4] Figure 30-1 shows the boundaries of each hydrologic region. Table 30-3 presents general characteristics of each hydrologic region, including counties partly or wholly within the region (also shown in Figure 30-1), area, precipitation, existing and projected (2050) population, reservoir storage, and the acreage of irrigated crops under cultivation.

Eight of the 10 hydrologic regions include SWP and CVP contractors that supply water for municipal and industrial (M&I) uses, also referred to as urban uses, and are therefore considered part of the environmental setting/affected environment area for the proposed project (Table 30-4). These include the following hydrologic regions: San Francisco Bay, Central Coast, South Coast, Sacramento River, San Joaquin River, Tulare Lake, South Lahontan, and Colorado River.

[4] Using these hydrologic regions as planning boundaries allows consistent tracking of their natural water runoff and the accounting of surface and groundwater supplies.

**Table 30-3. General Characteristics of Affected Hydrologic Regions[a]**

| Hydrologic Regions with SWP and/or CVP Contractors | Counties *(Counties in Multiple Regions in Italics)* | Area (square miles/ percent of State)[b] | Average Annual Precipitation (inches)[b] | Population (2000)[c] | Population (2010)[d] | Projected Population (2050)[b] | Total Reservoir Storage (thousand acre-feet)[b] | Total Irrigated Crop Area in Acres (2000)[c] |
|---|---|---|---|---|---|---|---|---|
| San Francisco Bay | Sonoma, *Napa,* Marin, *Solano, Contra Costa,* San Francisco, Alameda, San Mateo, *Santa Clara* | 4,506 2.8 | 25.4 | 6,105,650 | 6,389,609 | 8,948,720 | 746 | 70,300 |
| Sacramento River | Siskiyou, Modoc, Shasta, Lassen, Tehama, Glenn, Butte, Plumas, Lake, Colusa, Sutter, Yuba, Nevada, Sierra, *Napa*, Yolo, Placer, *Solano*, *Sacramento*, El Dorado, *Alpine,* Amador | 27,246 17.2 | 36.7 | 2,593,110 | 3,017,180 | 5,348,930 | 16,146 | 2,038,900 |
| San Joaquin River | *Alameda, Contra Costa, Sacramento, El Dorado,* Amador, San Joaquin, Calaveras, *Alpine*, Stanislaus, Tuolumne, Merced, Mariposa, *Fresno,* Madera | 15,214 9.6 | 26.3 | 1,751,010 | 2,176,939 | 4,885,870 | 11,477 | 2,050,400 |
| Central Coast | Santa Cruz, *Santa Clara*, *San Benito*, Monterey, San Luis Obispo, Santa Barbara, *Ventura* | 11,326 7.1 | 18.7 | 1,459,205 | 1,537,644 | 2,153,070 | 1,227 | 603,620 |
| South Coast | *Ventura, Los Angeles, San Bernardino*, Orange, *Riverside, San Diego* | 10,925 6.9 | 17.6 | 18,223,425 | 20,062,452 | 27,106,340 | 3,059 | 280,260 |
| Tulare Lake | *San Benito, Fresno,* Kings, Tulare, *Kern* | 17,033 10.7 | 15.2 | 1,884,675 | 2,279,977 | 5,194,490 | 2,046 | 3,219,000 |
| South Lahontan | Mono, Inyo, *San Bernardino, Los Angeles, Kern* | 26,732 16.9 | 7.8 | 721,490 | 901,981 | 2,387,400 | 459 | 65,080 |

| Hydrologic Regions with SWP and/or CVP Contractors | Counties *(Counties in Multiple Regions in Italics)* | Area (square miles/ percent of State)[b] | Average Annual Precipitation (inches)[b] | Population (2000)[c] | Population (2010)[d] | Projected Population (2050)[b] | Total Reservoir Storage (thousand acre-feet)[b] | Total Irrigated Crop Area in Acres (2000)[c] |
|---|---|---|---|---|---|---|---|---|
| Colorado River | *San Bernardino, Riverside, San Diego,* Imperial | 19,962 12.6 | 5.7 | 606,535 | 831,108 | 2,309,280 | 620 | 731,890 |

[a] Excludes those hydrologic regions outside SWP or CVP contractor service areas (North Coast and North Lahontan).

Sources:

[b] DWR 2009

[c] DWR 2005

[d] ESRI 2011 **[Note to reviewers: ESRI 2011 is currently the best available data for 2010 population, however we recommend using US Census 2010 data when it becomes available]**

## Table 30-4. State Water Project and Central Valley Project Contractors Serving Urban Uses[a]

| Hydrologic Region[b] | SWP Contractors | CVP Contractor |
|---|---|---|
| San Francisco Bay | Alameda County Flood Control and Water Conservation District—Zone 7<br>Alameda County Water District<br>Solano County Water Agency<br>Santa Clara Valley Water District | Santa Clara Valley Water District |
| Sacramento River | City of Yuba City<br>Solano County Water Agency | City of Redding<br>City of Roseville<br>City of Shasta Lake<br>City of West Sacramento<br>Sacramento County Water Agency<br>San Juan Water District |
| San Joaquin River | | Contra Costa Water District<br>East Bay Municipal Utility District<br>City of Tracy<br>El Dorado Irrigation District |
| Central Coast | San Luis Obispo County Flood Control and Water Conservation District<br>Santa Barbara County Flood Control and Water Conservation District<br>Santa Clara Valley Water District | Santa Clara Valley Water District<br>San Benito County Water District |
| South Coast | Castaic Lake Water Agency[c]<br>Metropolitan Water District of Southern California<br>San Bernardino Valley Municipal Water District<br>San Gabriel Valley Municipal Water District<br>Ventura County Flood Control District | |
| Tulare Lake | Kern County Water Agency | City of Fresno |
| South Lahontan | Antelope Valley—East Kern Water Agency<br>Crestline—Lake Arrowhead Water Agency<br>Palmdale Water District<br>Mojave Water Agency | |

| Hydrologic Region[b] | SWP Contractors | CVP Contractor |
|---|---|---|
| Colorado River | Mojave Water Agency<br>Coachella Valley Water District<br>Desert Water Agency | |

Sources: DWR 2007; Reclamation 2008.

[a] Includes agencies required to prepare Urban Water Management Plans (i.e., those using more than 3,000 acre-feet of water annually or those with 3,000 or more service connections).

[b] Excludes those hydrologic regions outside SWP or CVP contractor service areas (North Coast and North Lahontan).

[c] District includes land in the San Joaquin Valley area formerly known as Devil's Den Water District.

The SWP and CVP are the two largest water supply sources in the state. For purposes of evaluating the potential for the project to directly or indirectly induce growth, the environmental setting/affected environment area of the proposed project includes those SWP and CVP contractor service areas that: (1) may receive increases in long-term water supplies (through reallocations from other existing contractors) or may experience increased reliability of currently available supplies (through construction of storage facilities, for example) associated with the proposed project; and (2) could provide that water for urban development.

Accordingly, water use by existing SWP and CVP contractors was reviewed to identify those that currently provide water for urban uses. Table 30-4 lists SWP and CVP contractors with at least 3,000 connections and/or that use at least 3,000 acre-feet per year; these thresholds were selected because they are the thresholds requiring preparation of urban water management plans (refer to discussion under Section 30.1.3.4, Coordination of Land Use Planning and Water Supply).

The following sections describe each hydrologic region. The descriptions include information on: population characteristics; water supply sources; SWP and CVP contractor service areas that meet the threshold (serve M&I uses that have at least 3,000 connections and/or that use at least 3,000 acre-feet per year); percent of deliveries provided by the SWP and CVP; current applied water use; and projected water use under three demand scenarios DWR developed for Bulletin 160-09 (DWR 2009). The future year, 2050, was established to estimate future water demands and delivery capabilities of existing and planned facilities. The three demand scenarios are Current Trends, Slow and Strategic Growth and Expansive Growth.

- **Current Trends.** For this scenario, recent trends are assumed to continue into the future. In 2050, nearly 60 million people live in California. Affordable housing has drawn families to the interior valleys. Commuters take longer trips in distance and time. In some areas where urban development and natural resources restoration has increased, irrigated crop land has decreased. The state faces lawsuits on a regular basis from flood damages to water quality and endangered species protections. Regulations are not comprehensive or coordinated, creating uncertainty for local planners and water managers.

- **Slow and Strategic Growth.** Private, public, and governmental institutions form alliances to provide for more efficient planning and development that is less resource intensive than current conditions. Population growth is slower than currently projected – about 45 million people live here. Compact urban development has eased commuter travel. Californians embrace water and energy conservation. Conversion of agricultural land to urban development has slowed and

occurs mostly for environmental restoration and flood protection. state government implements comprehensive and coordinated regulatory programs to improve water quality, protect fish and wildlife, and protect communities from flooding.

- **Expansive Growth.** Future conditions are more resource intensive than existing conditions. Population growth is faster than currently projected with 70 million people living in California in 2050. Families prefer low-density housing, and many seek rural residential properties, expanding urban areas. Some water and energy conservation programs are offered but at a slower rate than trends in the early century. Irrigated crop land has decreased significantly where urban development and natural restoration have increased. Protection of water quality and endangered species is driven mostly by lawsuits creating uncertainty.

### 30.1.3.1 San Francisco Bay Hydrologic Region

The San Francisco Bay Hydrologic Region includes basins draining into San Francisco, San Pablo, and Suisun bays, as well as basins draining into the Sacramento River downstream from Collinsville, western Contra Costa County, and basins directly tributary to the Pacific Ocean below the Russian River watershed to the southern boundary of the Pescadero Creek Basin. [*Note to reviewers: we intend to insert pie charts depicting general water supply and water use characteristics for all the hydrologic regions*] Table 30-5 presents the current and projected populations of counties wholly or partially within the region. Figure 30-3 depict recent changes in urban growth (changes in population density between 1990 and 2010) in the San Francisco Bay Hydrologic Region. As shown in Table 30-3, this region has the smallest land area (approximately 4,506 square miles) among the affected regions. In 2010 this region had the second highest population (second only to the South Coast Region) and the second highest population density among the affected hydrologic regions. By 2050, DWR projections indicate that the population of the San Francisco Bay Hydrologic Region will increase by approximately 2.6 million people, a 40.1% increase relative to the 2010 population (DWR 2009). Major cities within the region include San Francisco, Oakland, and San Jose.

The following characterizes water use in the San Francisco Bay Hydrologic Region:[5]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supply, including outflows from the region, was approximately 1,917.3 thousand acre-feet (TAF), of which surface water constituted 87.8 %, groundwater constituted 10.7 %, and recycled water constituted 1.5 %. Compared to the other hydrologic regions, recycled water and groundwater comprised the lowest % of the San Francisco Bay Hydrologic Region's water supply.
- **SWP and CVP Contractors in Region.** Figure 30-4 depicts SWP and CVP contractor service areas in the region. Contractors serving M&I uses[6] in the region are Solano County Water Agency (SWP contractor) and Santa Clara Valley Water District (SCVWD) (SWP and CVP contractor). Table 30-6 serves as the legend for Figure 30-6 and subsequent figures depicting SWP and CVP contractor service areas; the service area identification numbers on Table 306 correlate with those shown on the service area figures.

[5] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 3-3, San Francisco Bay Hydrologic Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 3, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

[6] Only contractors with 3,000 or more connections or using more than 3,000 acre-feet annually are listed.

- **SWP and CVP Deliveries.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), average annual SWP water deliveries constituted 8.2 % (156.8 TAF) of supplies, and CVP deliveries constituted 6.3 % (120 TAF) of supplies (DWR 2010a).
- **Current Applied Water Use.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 1,917.3 TAF, of which urban use constituted 60.2 %, agricultural use constituted 6.4 %, and environmental use (including instream flows) constituted 33.4 %.

**Table 30-5. Current and Projected Populations of Counties[a] Within the San Francisco Bay Hydrologic Region**

| | Alameda | Contra Costa[b] | Marin | Napa[b] | San Francisco | San Mateo | Santa Clara[b] | Solano[b] | Sonoma |
|---|---|---|---|---|---|---|---|---|---|
| 2000 | 1,453,116 | 956,213 | 248,181 | 124,959 | 781,167 | 710,724 | 1,692,933 | 397,181 | 461,471 |
| 2008 | 1,548,492 | 1,056,477 | 257,522 | 137,010 | 842,625 | 742,251 | 1,846,757 | 426,026 | 484,547 |
| 2020 | 1,663,481 | 1,237,544 | 260,305 | 165,786 | 844,466 | 761,455 | 1,992,805 | 503,248 | 546,151 |
| 2025 | 1,729,326 | 1,330,908 | 266,500 | 178,403 | 850,704 | 774,435 | 2,092,508 | 546,980 | 575,945 |
| 2050 | 2,047,658 | 1,812,242 | 307,868 | 251,630 | 854,852 | 819,125 | 2,624,670 | 815,524 | 761,177 |
| 2060 | 2,195,264 | 1,993,406 | n/a | n/a | n/a | 813,458 | 2,863,244 | n/a | n/a |
| **2000–2008** | | | | | | | | | |
| Numerical Change | 95,376 | 100,264 | 9,341 | 12,051 | 61,458 | 31,527 | **153,824** | 28,845 | 23,076 |
| Percent Growth | 6.6 | **10.5** | 3.8 | 9.6 | 7.9 | 4.4 | 9.1 | 7.3 | 5.0 |
| Average Annual Growth Rate | 0.8 | 1.3 | 0.5 | 1.2 | 1.0 | 0.6 | 1.1 | 0.9 | 0.6 |
| **2008–2025** | | | | | | | | | |
| Numerical Change | 180,834 | **274,431** | 8,978 | 41,393 | 8,079 | 32,184 | 245,751 | 120,954 | 91,398 |
| Percent Growth | 11.7 | 26.0 | 3.5 | **30.2** | 1.0 | 4.3 | 13.3 | 28.4 | 18.9 |
| Average Annual Growth Rate | 0.7 | 1.5 | 0.2 | 1.8 | 0.1 | 0.3 | 0.8 | 1.7 | 1.1 |
| **2025–2050** | | | | | | | | | |
| Numerical Change | 318,332 | 481,334 | 41,368 | 73,227 | 4,148 | 44,690 | **532,162** | 268,544 | 185,232 |
| Percent Growth | 18.4 | 36.2 | 15.5 | 41.0 | 0.5 | 5.8 | 25.4 | **49.1** | 32.2 |
| Average Annual Growth Rate | 0.7 | 1.4 | 0.6 | 1.6 | 0.0 | 0.2 | 1.0 | 2.0 | 1.3 |
| **2050–2060** | | | | | | | | | |
| Numerical Change | 147,606 | 181,164 | n/a | n/a | n/a | -5,667 | **238,574** | n/a | n/a |
| Percent Growth | 7.2 | **10.0** | n/a | n/a | n/a | -0.7 | 9.1 | n/a | n/a |
| Average Annual Growth Rate | 0.7 | 1.0 | n/a | n/a | n/a | -0.1 | 0.9 | n/a | n/a |

[a] Includes counties wholly or partially within the San Francisco Bay Hydrologic Region. Excludes Santa Cruz County-only a small and/or relatively unpopulated portion of this county is located within the hydrologic region.

[b] Napa and Solano counties also in the Sacramento River Hydrologic Region; Contra Costa County also in the San Joaquin River Hydrologic Region; Santa Clara County also in the Central Coast Hydrologic Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase

Sources: DOF 2007a; DOF 2007b; DOF 2008

**Table 30-6. SWP and CVP Contractor Service Areas**

| Contractor | Contractor Type | Service Area Identification Number[a] |
|---|---|---|
| Alameda County Flood Control and Water Conservation District, Zone 7 | | 01 |
| Alameda County Water District | | 02 |
| Antelope Valley-East Kern Water Agency | | 03 |
| Castaic Lake Water Agency | | 04 |
| Coachella Valley Water District | | 05 |
| Crestline Lake | | 06 |
| Desert Water Agency | | 07 |
| Dudley Ridge Water District | | 08 |
| Empire West Side Irrigation District | | 09 |
| Kern County Water Agency | | 10 |
| Kings County | | 11 |
| Littlerock Creek Irrigation District | | 12 |
| Metropolitan Water District of Southern California | SWP | 13 |
| Mojave Water Agency | | 14 |
| Napa County Flood Control and Water Conservation District | | 15 |
| Oak Flat Water District | | 16 |
| Palmdale Water District | | 17 |
| San Bernardino Valley Municipal Water District | | 18 |
| San Gabriel Valley Municipal Water District | | 19 |
| San Gorgonio Pass Water Agency | | 20 |
| San Luis Obispo County Flood Control and Water Conservation District | | 21 |
| Santa Barbara County Flood Control and Water Conservation District | | 22 |
| Solano County Water Agency | | 23 |
| Tulare Lake Basin Water Storage District | | 24 |
| Ventura County Flood Control District | | 25 |
| Santa Clara Valley Water District | SWP and CVP | 26 |
| Banta Carbona Irrigation District | | 27 |
| Byron Bethany Irrigation District | | 28 |
| Central California Irrigation District | | 29 |
| Coelho Trust | | 30 |
| Columbia Canal Company | | 31 |
| Contra Costa Water District | CVP | 32 |
| Del Puerto Water District | | 33 |
| Eagle Field Water District | | 34 |
| Firebaugh Canal Water Company | | 35 |
| Fresno Slough Water District | | 36 |
| Grasslands Resource Conservation District | | 37 |

| Contractor | Contractor Type | Service Area Identification Number[a] |
|---|---|---|
| Hills Valley Irrigation District | | 38 |
| James Irrigation District | | 39 |
| Kern-National Wildlife Refuge | | 40 |
| Kern-Tulare Irrigation District | | 41 |
| Laguna Water District | | 42 |
| Lower Tule River Irrigation District | | 43 |
| Mercy Springs Water District | | 44 |
| Oro Loma Water District | | 45 |
| Pacheco Water District | | 46 |
| Panoche Water District | | 47 |
| Patterson Water District | | 48 |
| Pixley Irrigation District | | 49 |
| Pixley National Wildlife Refuge | | 50 |
| Rag Gulch Water District | | 51 |
| Reclamation District #1606 | | 52 |
| San Benito County Water District | | 53 |
| San Luis Canal Company | CVP | 54 |
| San Luis National Wildlife Refuge | | 55 |
| San Luis Water District | | 56 |
| Tracy, City of | | 57 |
| Tranquility Irrigation District | | 58 |
| Tranquility Public Utility District | | 59 |
| Tri-Valley Irrigation District | | 60 |
| West Side Irrigation District | | 61 |
| West Stanislaus Irrigation District | | 62 |
| Westlands Water District | | 63 |
| Wildlife Management Areas | | 64 |

[a] Service Area Identification Numbers are shown on the figures depicting SWP and CVP Contractor Service Areas.

- **Projected Water Use.** DWR projections indicate that water demand for the San Francisco Bay Hydrologic Region is expected to decrease (DWR 2009). Assuming current trends in water use, in year 2025 demand is expected to decrease by 11.7 % relative to annual water use in the reporting period (1998–2005). This projection suggests a reduction of 225 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 20.2 % decrease, while the Expansive demand scenario indicates a 1.5 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the San Francisco Bay Hydrologic Region would be likely to decrease in 2050. Assuming current trends, demand is expected to decrease by 2.2 % relative to baseline reporting period average annual water demand. This projection suggests a reduction of 42.8 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 30.3 % decrease, while the Expansive demand scenario indicates a 22.3 % increase in 2050 (DWR 2009).

### 30.1.3.2 Sacramento River Hydrologic Region

The Sacramento River Hydrologic Region includes basins draining into the Sacramento River system in the Central Valley (including the Pit River drainage), from the Oregon border south through the American River drainage basin. **Table 30-7** presents the current and projected populations of counties wholly or partially within the region. **Figure 30-5** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the Sacramento River Hydrologic Region. As shown in Table 30-3, this region has the largest land area among the affected regions; over 17 % of the state is within the Sacramento River Hydrologic Region. In 2000, over 2 million acres of irrigated cropland were under cultivation. In 2010, this region had the third highest total population and the third lowest population density among affected regions. DWR projections indicate that by 2050 the population will increase by approximately 2.3 million people, a 77 % increase relative to 2010 population (DWR 2009; ESRI 2011 ). Major cities in the region include Sacramento, Roseville, Davis, Elk Grove, Folsom, Chico, Redding, and Lodi.

The following characterizes water use in the region:[7]

- **Supplies**. For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supply, including outflows from the region, was approximately 22,753.6 TAF, of which surface water constituted 54.1 %, groundwater constituted 11.6 %, and recycled water constituted 34.2 %.
- **SWP and CVP Contractors in Region**. **Figure 30-6** depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors serving M&I uses in the region include Yuba City. CVP contractors serving M&I uses include the cities of Redding, Roseville, Shasta Lake, and West Sacramento; Sacramento County Water Agency; San Juan Water District; and El Dorado Irrigation District.
- **SWP and CVP Deliveries**. SWP water deliveries constituted 0.1 % of supplies, and CVP deliveries constituted 14.9 % of supplies.
- **Current Applied Water Use**. For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 22,753.6 TAF, of which urban use constituted 3.7 %, agricultural use constituted 36.6 %, and environmental uses (including instream flows) constituted 59.6 %.
- **Projected Water Use**. DWR projections indicate that water demand for the Sacramento River Hydrologic Region is expected to decrease by the year 2025 (DWR 2009). Assuming current trends in water use, demand in year 2025 is expected to be decrease by 3.7 % relative to annual water use during the baseline reporting period. This projection suggests a reduction of 838 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 4.8 % decrease, while the Expansive demand scenario indicates a 2.7 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the Sacramento River Hydrologic Region would decrease in 2050. Assuming current trends, demand is expected to be 6 % less than annual demand during the baseline reporting period. This projection suggests a reduction of 1,364.7 TAF of water demand in 2050. For comparison, the Slow and Strategic demand

[7] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 6-3, Sacramento River Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 6, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

scenario indicates an 8.8 % decrease, while the Expansive demand scenario indicates a 3.6 % decrease in 2050 (DWR 2009).

### 30.1.3.3 San Joaquin River Hydrologic Region

The San Joaquin River Hydrologic Region includes basins draining into the San Joaquin River system, from the Cosumnes River basin on the north through the southern boundary of the San Joaquin River watershed. **Table 30-8** presents the current and projected populations of counties wholly or partially within the region.

**Figure 30-7** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the San Joaquin River Hydrologic Region. In 2000, over 2 million acres of irrigated cropland were under cultivation. As shown in Table 30-3, this region has a total land area of approximately 15,214 square miles. In 2010, this region had the fifth highest total population and the third highest population density among affected regions. DWR projections indicate that by 2050 the population will increase by approximately 2.7 million people, a 124 % increase relative to 2010 population (DWR 2009; ESRI 2011)

Major cities in the region include Stockton, Fresno, Tracy, Modesto, Merced, and Clovis.

The following characterizes water use in the region:[8]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supply, including outflows from the region, was approximately 11,274 TAF, of which surface water constituted 49.5 %, groundwater constituted 23.6 %, and recycled water constituted 26.9 %. Compared to the other hydrologic regions, recycled water comprised the highest percent of the San Joaquin River Hydrologic Region's water supply.
- **SWP and CVP Contractors in Region. Figure 30-8** depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). CVP contractors serving M&I uses include Contra Costa Water District, East Bay Municipal Utility District, El Dorado Irrigation District, and City of Tracy. No SWP Contractors serving M&I uses meet the minimum threshold in the region.
- **SWP and CVP Deliveries.** SWP deliveries constituted 0.1 % (7.8 TAF) of supplies, and CVP deliveries constituted 14.8 % (1,673 TAF) of supplies (DWR 2010a).).
- **Current Applied Water Use.**[9] For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 11,274 TAF, of which urban use constituted 5.4 %, agricultural use constituted 62 %, and environmental uses (including instream flows) constituted 32.5 %.



[8] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 7-2, San Joaquin River Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 7, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

[9] Applied water refers to the total amount of water diverted from any source in order to meet the demands for beneficial use by water users (dedicated water uses), without adjusting for water that is used up, returned to the developed supply, or is irrecoverable. It includes consumptive use, reuse, and outflows.

**Table 30-7. Current and Projected Populations of Counties[a] within the Sacramento River Hydrologic Region**

| | Butte | Colusa | El Dorado | Glenn | Lake | Lassen | Modoc | Nevada | Napa[b] | Placer | Plumas | Sacramento[b] | Shasta | Sierra | Siskiyou | Solano[b] | Sutter | Tehama | Yolo | Yuba |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 203,962 | 18,916 | 158,534 | 26,618 | 58,575 | 33,973 | 9,525 | 92,385 | 124,959 | 252,243 | 20,714 | 1,233,563 | 164,645 | 3,629 | 44,482 | 397,181 | 79,499 | 55,921 | 170,096 | 60,415 |
| 2008 | 220,769 | 21,848 | 179,969 | 29,286 | 64,069 | 35,763 | 9,727 | 99,116 | 137,010 | 338,750 | 20,696 | 1,427,885 | 182,470 | 3,353 | 46,017 | 426,026 | 96,541 | 62,466 | 200,009 | 72,351 |
| 2020 | 281,442 | 29,588 | 221,140 | 37,959 | 77,912 | 42,394 | 13,134 | 114,451 | 165,786 | 428,535 | 22,934 | 1,622,306 | 224,386 | 3,508 | 51,283 | 503,248 | 141,159 | 79,484 | 245,052 | 109,216 |
| 2025 | 308,218 | 32,070 | 235,212 | 41,540 | 82,583 | 44,902 | 14,701 | 119,674 | 178,403 | 470,649 | 23,772 | 1,714,888 | 242,618 | 3,408 | 53,568 | 546,980 | 160,985 | 86,463 | 260,463 | 122,969 |
| 2050 | 441,596 | 41,662 | 314,126 | 63,586 | 106,887 | 55,989 | 24,085 | 136,113 | 251,630 | 751,208 | 28,478 | 2,176,508 | 331,724 | 3,547 | 66,588 | 815,524 | 282,894 | 124,475 | 327,982 | 201,327 |
| 2060 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **2000–2008** | | | | | | | | | | | | | | | | | | | | |
| Numerical Change | 16,807 | 2,932 | 21,435 | 2,668 | 5,494 | 1,790 | 202 | 6,731 | 12,051 | **86,507** | -18 | **194,322** | 17,825 | -276 | 1,535 | 28,845 | 17,042 | 6,545 | 29,913 | 11,936 |
| Percent Growth | 8.2 | 15.5 | 13.5 | 10.0 | 9.4 | 5.3 | 2.1 | 7.3 | 9.6 | **34.3** | -0.1 | 15.8 | 10.8 | -7.6 | 3.5 | 7.3 | **21.4** | 11.7 | 17.6 | 19.8 |
| Average Annual Growth Rate | 1.0 | 1.9 | 1.7 | 1.3 | 1.2 | 0.7 | 0.3 | 0.9 | 1.2 | 4.3 | 0.0 | 2.0 | 1.4 | -1.0 | 0.4 | 0.9 | 2.7 | 1.5 | 2.2 | 2.5 |
| **2008–2025** | | | | | | | | | | | | | | | | | | | | |
| Numerical Change | 87,449 | 10,222 | 55,243 | 12,254 | 18,514 | 9,139 | 4,974 | 20,558 | 41,393 | **131,899** | 3,076 | **287,003** | 60,148 | 55 | 7,551 | 120,954 | 64,444 | 23,997 | 60,454 | 50,618 |
| Percent Growth | 39.6 | 46.8 | 30.7 | 41.8 | 28.9 | 25.6 | **51.1** | 20.7 | 30.2 | 38.9 | 14.9 | 20.1 | 33.0 | 1.6 | 16.4 | 28.4 | 66.8 | 38.4 | 30.2 | **70.0** |
| Average Annual Growth Rate | 2.3 | 2.8 | 1.8 | 2.5 | 1.7 | 1.5 | 3.0 | 1.2 | 1.8 | 2.3 | 0.9 | 1.2 | 1.9 | 0.1 | 1.0 | 1.7 | 3.9 | 2.3 | 1.8 | 4.1 |
| **2025–2050** | | | | | | | | | | | | | | | | | | | | |
| Numerical Change | 133,378 | 9,592 | 78,914 | 22,046 | 24,304 | 11,087 | 9,384 | 16,439 | 73,227 | 280,559 | 4,706 | **461,620** | 89,106 | 139 | 13,020 | 268,544 | 121,909 | 38,012 | 67,519 | 78,358 |
| Percent Growth | 43.3 | 29.9 | 33.6 | 53.1 | 29.4 | 24.7 | **63.8** | 13.7 | 41.0 | 59.6 | 19.8 | 26.9 | 36.7 | 4.1 | 24.3 | 49.1 | **75.7** | 44.0 | 25.9 | 63.7 |
| Average Annual Growth Rate | 1.7 | 1.2 | 1.3 | 2.1 | 1.2 | 1.0 | 2.6 | 0.5 | 1.6 | 2.4 | 0.8 | 1.1 | 1.5 | 0.2 | 1.0 | 2.0 | 3.0 | 1.8 | 1.0 | 2.5 |
| **2050–2060** | | | | | | | | | | | | | | | | | | | | |
| Numerical Change | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Percent Growth | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Average Annual Growth Rate | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

[a] Includes counties wholly or partially within the Sacramento River Hydrologic Region, Excludes Alpine and Amador counties-only a small and/or relatively unpopulated portion of these counties are located within the hydrologic region.

[b] Napa and Solano counties also in the San Francisco Bay Hydrologic Region; Sacramento County also in the San Joaquin River Hydrologic Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

**Table 30-8. Current and Projected Populations of Counties[a] Within the San Joaquin River Hydrologic Region**

| | Alameda | Alpine[b] | Amador | Calaveras | Contra Costa[b] | Fresno[b] | Madera | Mariposa | Merced | Sacramento[b] | San Joaquin | Stanislaus | Tuolumne |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 1,453,116 | 1,205 | 35,324 | 40,735 | 956,213 | 804,393 | 124,516 | 16,985 | 211,223 | 1,233,563 | 568,991 | 451,029 | 54,715 |
| 2008 | 1,548,492 | 1,202 | 37,863 | 45,980 | 1,056,477 | 936,828 | 151,938 | 18,297 | 256,114 | 1,427,885 | 687,044 | 526,047 | 56,470 |
| 2020 | 1,663,481 | 1,453 | 47,593 | 56,318 | 1,237,544 | 1,201,792 | 212,874 | 21,743 | 348,690 | 1,622,306 | 965,094 | 699,144 | 64,161 |
| 2025 | 1,729,326 | 1,467 | 51,331 | 60,632 | 1,330,908 | 1,314,530 | 243,290 | 22,961 | 393,328 | 1,714,888 | 1,081,143 | 776,490 | 66,045 |
| 2050 | 2,047,658 | 1,377 | 68,487 | 80,424 | 1,812,242 | 1,928,411 | 413,569 | 28,091 | 652,355 | 2,176,508 | 1,783,973 | 1,191,344 | 73,291 |
| 2060 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **2000–2008** | | | | | | | | | | | | | |
| Numerical Change | 95,376 | -3 | 2,539 | 5,245 | 100,264 | 132,435 | 1,312 | 27,422 | 44,891 | **194,322** | 118,053 | 75,018 | 1,755 |
| Percent Growth | 6.6 | -0.2 | 7.2 | 12.9 | 10.5 | 16.5 | 7.7 | **22.0** | 21.3 | 15.8 | 20.7 | 16.6 | 3.2 |
| Average Annual Growth Rate | 0.8 | 0.0 | 0.9 | 1.6 | 1.3 | 2.1 | 1.0 | 2.8 | 2.7 | 2.0 | 2.6 | 2.1 | 0.4 |
| **2008–2025** | | | | | | | | | | | | | |
| Numerical Change | 180,834 | 265 | 13,468 | 14,652 | 274,431 | 377,702 | 4,664 | 91,352 | 137,214 | 287,003 | **394,099** | 250,443 | 9,575 |
| Percent Growth | 11.7 | 22.0 | 35.6 | 31.9 | 26.0 | 40.3 | 25.5 | **60.1** | 53.6 | 20.1 | 57.4 | 47.6 | 17.0 |
| Average Annual Growth Rate | 0.7 | 1.3 | 2.1 | 1.9 | 1.5 | 2.4 | 1.5 | 3.5 | 3.2 | 1.2 | 3.4 | 2.8 | 1.0 |
| **2025–2050** | | | | | | | | | | | | | |
| Numerical Change | 318,332 | -90 | 17,156 | 19,792 | 481,334 | 613,881 | 5,130 | 170,279 | 259,027 | 461,620 | **702,830** | 414,854 | 7,246 |
| Percent Growth | 18.4 | -6.1 | 33.4 | 32.6 | 36.2 | 46.7 | 22.3 | **70.0** | 65.9 | 26.9 | 65.0 | 53.4 | 11.0 |
| Average Annual Growth Rate | 0.7 | -0.2 | 1.3 | 1.3 | 1.4 | 1.9 | 0.9 | 2.8 | 2.6 | 1.1 | 2.6 | 2.1 | 0.4 |
| **2050–2060** | | | | | | | | | | | | | |
| Numerical Change | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Percent Growth | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Average Annual Growth Rate | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

[a] Includes counties wholly or partially within the Sacramento River Hydrologic Region. Excludes Benito and El Dorado counties-only a small and/or relatively unpopulated portion of these counties are located within the hydrologic region.

[b] Contra Costa County also in the San Francisco Bay Hydrologic Region; Sacramento County also in the Sacramento River Hydrologic Region. Fresno County also in the Tulare Lake Hydrologic Region

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

- **Projected Water Use.** DWR projections indicate that water demand for the San Joaquin River Hydrologic Region is expected to decrease by the year 2025 (DWR 2009). Assuming current trends in water use, in year 2025 demand is expected to decrease by 4.8 % relative to annual water in the reporting period (1998–2005). This projection suggests a reduction of 545.1 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 6.4 % decrease, while the Expansive demand scenario indicates a 4.1 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the San Joaquin Hydrologic Region would decrease in 2050. Assuming current trends, demand is expected to be 12.9 % less than the 2000 water demand. This projection suggests a reduction of 1,455.1 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 16.8 % decrease, while the Expansive demand scenario indicates a 10.2 % decrease in 2050 (DWR 2009).

### 30.1.3.4 Central Coast Hydrologic Region

The Central Coast Hydrologic Region includes basins draining to the Pacific Ocean below the Pescadero Creek watershed to the southeastern boundary of Rincon Creek Basin in western Ventura County. **Table 30-9** presents the current and projected populations of counties wholly or partially within the region. **Figure 30-9** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the Central Coast Hydrologic Region. As shown in Table 30-3, this region has the third smallest land area (approximately 11,326 square miles) among the affected regions. In 2010, this region had the third lowest total population and the fourth highest population density among affected regions. DWR projections indicate that by 2050 the Central Coast Hydrologic Region will experience the smallest net population growth among affected regions with population increasing by approximately 0.6 million people, a 40 % increase relative to 2010 population. (DWR 2009; ESRI 2011). Major cities in the region include Santa Cruz, Watsonville, San Luis Obispo, and Santa Barbara.

The following characterizes water use in the region:[10]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supplies, including outflows from the region, was approximately 1,471.8 TAF, of which surface water constituted 16.6 %, groundwater constituted 76.4 %, and recycled water constituted 7.0 %. Compared to the other hydrologic regions, surface water comprised the lowest percent and groundwater the highest percent of the Central Coast Hydrologic Region's water supply.
- **SWP and CVP Contractors in Region**. Figure 30-10 depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors in the region serving M&I uses include San Luis Obispo County Flood Control and Water Conservation District, Santa Barbara County Flood Control and Water Conservation District, and SCVWD. CVP Contractors serving M&I uses are San Benito County Water District and SCVWD.

[10] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 4-2, Central Coast Hydrologic Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 4, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

**Table 30-9. Current and Projected Populations of Counties[a] within the Central Coast Hydrologic Region**

| | Monterey | San Benito | San Luis Obispo | Santa Barbara | Santa Clara[b] | Santa Cruz | Ventura[b] |
|---|---|---|---|---|---|---|---|
| 2000 | 403,902 | 53,785 | 248,188 | 400,930 | 1,692,933 | 256,469 | 758,614 |
| 2008 | 429,083 | 57,629 | 270,046 | 429,109 | 1,846,757 | 267,541 | 830,343 |
| 2020 | 476,642 | 83,792 | 293,540 | 459,498 | 1,992,805 | 287,480 | 956,392 |
| 2025 | 502,659 | 93,474 | 305,372 | 472,346 | 2,092,508 | 296,575 | 1,004,354 |
| 2050 | 646,590 | 145,570 | 364,748 | 534,447 | 2,624,670 | 333,083 | 1,229,737 |
| 2060 | n/a | n/a | n/a | n/a | n/a | n/a | 1,334,585 |
| **2000–2008** | | | | | | | |
| Numerical Change | 25,181 | 3,844 | 21,858 | 28,179 | **153,824** | 11,072 | 71,729 |
| Percent Growth | 6.2 | 7.1 | 8.8 | 7.0 | 9.1 | 4.3 | **9.5** |
| Average Annual Growth Rate | 0.8 | 0.9 | 1.1 | 0.9 | 1.1 | 0.5 | 1.2 |
| **2008–2025** | | | | | | | |
| Numerical Change | 73,576 | 35,845 | 35,326 | 43,237 | **245,751** | 29,034 | 174,011 |
| Percent Growth | 17.1 | **62.2** | 13.1 | 10.1 | 13.3 | 10.9 | 21.0 |
| Average Annual Growth Rate | 1.0 | 3.7 | 0.8 | 0.6 | 0.8 | 0.6 | 1.2 |
| **2025–2050** | | | | | | | |
| Numerical Change | 143,931 | 52,096 | 59,376 | 62,101 | **532,162** | 36,508 | 225,383 |
| Percent Growth | 28.6 | 55.7 | 19.4 | 13.1 | 25.4 | 12.3 | 22.4 |
| Average Annual Growth Rate | 1.1 | 2.2 | 0.8 | 0.5 | 1.0 | 0.5 | 0.9 |
| **2050–2060** | | | | | | | |
| Numerical Change | n/a | n/a | n/a | n/a | n/a | n/a | 104,848 |
| Percent Growth | n/a | n/a | n/a | n/a | n/a | n/a | 8.5 |
| Average Annual Growth Rate | n/a | n/a | n/a | n/a | n/a | n/a | 0.9 |

[a] Includes counties wholly or partially within the Central Coast Hydrologic Region.

[b] Santa Clara County also in the San Francisco Bay Hydrologic Region; Ventura County also in the South Coast Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

- **SWP and CVP Deliveries**. For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), SWP water deliveries constituted 2.3 % of supplies, and CVP deliveries constituted 3.8 % of supplies (DWR 2010a).

- **Current Applied Water Use.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 1,471.8 TAF, of which urban use constituted 19.8 %, agricultural use constituted 71.3 %, and environmental uses (including instream flows) constituted 8.8 %.

- **Projected Water Use.** DWR projections indicate that water demand for the Central Coast Hydrologic Region is expected to decrease by the year 2025 (DWR 2009). Assuming current trends in water use, in year 2025 demand is expected to decrease by 4.1 % relative to annual water use in the reporting period. This projection suggests a reduction of 60.3 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates an 11.0 % decrease, while the Expansive demand scenario indicates a 3.1 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the San Francisco Bay Hydrologic Region would decrease in 2050. Assuming current trends, demand is expected to decrease 14.5 % relative to the baseline reporting period. This projection suggests a reduction of 213.3 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 29.3 % decrease, while the Expansive demand scenario indicates a 10 % decrease in 2050 (DWR 2009).

### 30.1.3.5 South Coast Hydrologic Region

The South Coast Hydrologic Region includes basins draining into the Pacific Ocean from the southeastern boundary of Rincon Creek Basin to the international border with Mexico. Table 30-10 presents the current and projected populations of counties wholly or partially within the region. Figure 30-11 depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the South Coast Hydrologic Region. As shown in Table 30-3, this region has the second smallest land area (approximately 10,925 square miles) among the affected regions. In 2010, this region had the highest total population and the highest population density among affected regions. DWR projections indicate that by 2050 the South Coast Hydrologic Region will experience the largest net population growth among affected regions with population increasing by approximately 7 million people, a 35% increase relative to 2010 population (DWR 2009; ESRI 2011

The following characterizes water use in the region:[11]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supplies, including outflows from the region, was approximately 5,009 TAF, of which surface water constituted 59.2 %, groundwater constituted 33 %, and recycled water constituted 7.8 %.

- **SWP and CVP Contractors in Region.** Figure 30-12 depicts SWP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors serving M&I uses in the region include: Castaic Lake Water Agency, Metropolitan Water District of Southern California (MWD), San Bernardino Valley Municipal Water District, San Gabriel Valley Municipal Water District, and Ventura County Flood Control District. There are no CVP contractors serving M&I uses that meet the minimum threshold in the region.

- **SWP and CVP Deliveries.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), average annual SWP water deliveries constituted 25.7 % of supplies; the region receives no CVP supplies.

[11] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 5-2, South Coast Hydrologic Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 5, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

**Table 30-10. Current and Projected Populations of Counties[a] Within the South Coast Hydrologic Region**

| | Los Angeles | Orange | Riverside[b] | San Bernardino[b] | San Diego | Ventura[b] |
|---|---|---|---|---|---|---|
| 2000 | 9,575,838 | 2,863,368 | 1,559,076 | 1,722,378 | 2,836,506 | 758,614 |
| 2008 | 10,347,437 | 3,125,756 | 2,106,328 | 2,060,722 | 3,161,477 | 830,343 |
| 2020 | 11,214,237 | 3,520,265 | 2,904,848 | 2,581,371 | 3,550,714 | 956,392 |
| 2025 | 11,593,214 | 3,618,505 | 3,204,859 | 2,773,588 | 3,752,483 | 1,004,354 |
| 2050 | 13,061,787 | 3,987,625 | 4,730,922 | 3,662,193 | 4,508,728 | 1,229,737 |
| 2060 | 13,615,773 | 3,972,398 | 5,188,332 | 3,897,223 | 4,705,967 | 1,334,585 |
| **2000–2008** | | | | | | |
| Numerical Change | **771,599** | 262,388 | 547,252 | 338,344 | 324,971 | 71,729 |
| Percent Growth | 8.1 | 9.2 | **35.1** | 19.6 | 11.5 | 9.5 |
| Average Annual Growth Rate | 1.0 | 1.1 | 4.4 | 2.5 | 1.4 | 1.2 |
| **2008–2025** | | | | | | |
| Numerical Change | **1,245,777** | 492,749 | 1,098,531 | 712,866 | 591,006 | 174,011 |
| Percent Growth | 12.0 | 15.8 | **52.2** | 34.6 | 18.7 | 21.0 |
| Average Annual Growth Rate | 0.7 | 0.9 | 3.1 | 2.0 | 1.1 | 1.2 |
| **2025–2050** | | | | | | |
| Numerical Change | 1,468,573 | 369,120 | **1,526,063** | 888,605 | 756,245 | 225,383 |
| Percent Growth | 12.7 | 10.2 | **47.6** | 32.0 | 20.2 | 22.4 |
| Average Annual Growth Rate | 0.5 | 0.4 | 1.9 | 1.3 | 0.8 | 0.9 |
| **2050–2060** | | | | | | |
| Numerical Change | **553,986** | -15,227 | 457,410 | 235,030 | 197,239 | 104,848 |
| Percent Growth | 4.2 | -0.4 | **9.7** | 6.4 | 4.4 | 8.5 |
| Average Annual Growth Rate | 0.4 | 0.0 | 1.0 | 0.6 | 0.4 | 0.9 |

[a] Includes counties wholly or partially within the Central Coast Hydrologic Region.

[b] Ventura County also in the Central Coast Hydrologic Region; San Bernardino County also in the Colorado River Hydrologic Region and the South Lahontan Hydrologic Region. Riverside County also in the Colorado River Hydrologic Region. Kern County also in the South Lahontan Hydrologic Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

- **Current Applied Water Use.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 5,009 TAF, of which urban use constituted 80.9 %, agricultural use constituted 16.1 %, and environmental uses (including instream flows) constituted 3 %.

- **Projected Water Use.** DWR projections indicate that water demand for the South Coast Hydrologic Region is expected to increase (DWR 2009). Assuming current trends in water use,

in year 2025 demand is expected to increase by 9.0 % relative to annual water use in the reporting period (1998–2005). This projection suggests an additional 452.8 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 0.6 % decrease, while the Expansive demand scenario indicates a 22.0 % increase in 2025 (DWR 2009). DWR projections also indicate that water demand for the South Coast Hydrologic Region would increase, in two out of the three scenarios, in 2050. Assuming current trends, demand is projected to increase 26.5 percent relative to the baseline reporting period. This projection suggests an additional 639.3 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 2.8 % decrease while the Expansive demand scenario indicates a 57 % increase in 2050 relative to the baseline reporting period (DWR 2009).

### 30.1.3.6 Tulare Lake Hydrologic Region

The Tulare Lake Hydrologic Region comprises the closed drainage basin at the south end of the San Joaquin Valley, south of the San Joaquin River watershed, encompassing basins draining to the beds of the former Kern and Tulare lakes, and Buena Vista Lake (or Buena Vista Aquatic Recreation Area). **Table 30-11** presents the current and projected populations of counties wholly or partially within the region. **Figure 30-13** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the Tulare Lake Hydrologic Region. Among the affected regions, the Tulare Lake Hydrologic Region has the highest acreage of irrigated cropland (3.2 million acres). As shown in Table 30-3, this region has the fourth largest land area (approximately 17,033 square miles) among the affected regions. In 2010, this region had the fourth highest total population and the fifth highest population density among affected regions. DWR projections indicate that by 2050 the Tulare Lake Hydrologic Region will experience the second largest net population growth among affected regions with population increasing by approximately 2.9 million people, a 128 % increase relative to 2010 population (DWR 2009; ESRI 2011 Major cities within the region include Tulare, Visalia, Bakersfield, and Porterville.

The following characterizes water use in the region:[12]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supplies, including outflows from the region, was approximately 12,729.6 TAF, of which surface water constituted 44.5 %, groundwater constituted 42.9 %, and recycled water constituted 12.6 %.
- **SWP and CVP Contractors in Region. Figure 30-14** depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors in the region serving M&I uses include the Kern County Water Agency. CVP contractors serving M&I uses include the City of Fresno.
- **SWP and CVP Deliveries.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), average annual SWP water deliveries constituted 9.7 % (1,235.1 TAF) of supplies, and CVP deliveries constituted 16.9 % (2,155.3 TAF) of supplies. SWP and CVP deliveries in the Tulare Lake Hydrologic Region were the highest percent of total water supply compared to the other hydrologic regions.

[12] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 8-3, Tulare Lake Hydrologic Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 8, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

- **Current Applied Water Use**. For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 12,729.6 TAF of which urban use constituted 5.4 %, agricultural use constituted 81.7 %, and environmental uses (including instream flows) constituted 12.9 %.

- **Projected Water Use.** DWR projections indicate that water demand for the Tulare Lake Hydrologic Region is expected to decrease by the year 2025 (DWR 2009). Assuming current trends in water use, demand is expected to decrease by 9.0 % relative to annual water use in the reporting period (1998–2005). This projection suggests a reduction of 1,148.0 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 11.1 % decrease, while the Expansive demand scenario indicates a 7.5 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the San Francisco Bay Hydrologic Region would decrease in 2050. Assuming current trends, demand is expected to decrease by 19.2 % relative to baseline reporting period average annual water demand. This projection suggests a reduction of 2,446.7 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 22.7 % decrease, while the Expansive demand scenario indicates a 16.3 % decrease in 2050 (DWR 2009).

**Table 30-11. Current and Projected Populations of Counties[a] Within the Tulare Lake Hydrologic Region**

| | Fresno[b] | Kern[b] | Kings | Tulare |
|---|---|---|---|---|
| 2000 | 804,393 | 665,308 | 130,060 | 369,633 |
| 2008 | 936,828 | 823,550 | 155,024 | 438,276 |
| 2020 | 1,201,792 | 1,086,113 | 205,707 | 599,117 |
| 2025 | 1,314,530 | 1,215,857 | 227,588 | 669,452 |
| 2050 | 1,928,411 | 2,106,024 | 352,750 | 1,026,755 |
| 2060 | n/a | n/a | n/a | n/a |
| **2000–2008** | | | | |
| Numerical Change | 132,435 | **158,242** | 24,964 | 68,643 |
| Percent Growth | 16.5 | **23.8** | 19.2 | 18.6 |
| Average Annual Growth Rate | 2.1 | 3.0 | 2.4 | 2.3 |
| **2008–2025** | | | | |
| Numerical Change | 377,702 | **392,307** | 72,564 | 231,176 |
| Percent Growth | 40.3 | 47.6 | 46.8 | **52.7** |
| Average Annual Growth Rate | 2.4 | 2.8 | 2.8 | 3.1 |
| **2025–2050** | | | | |
| Numerical Change | 613,881 | **890,167** | 125,162 | 357,303 |
| Percent Growth | 46.7 | **73.2** | 55.0 | 53.4 |
| Average Annual Growth Rate | 1.9 | 2.9 | 2.2 | 2.1 |
| **2050–2060** | | | | |
| Numerical Change | n/a | n/a | n/a | n/a |
| Percent Growth | n/a | n/a | n/a | n/a |
| Average Annual Growth Rate | n/a | n/a | n/a | n/a |

[a] Includes counties wholly or partially within the Tulare Lake Hydrologic Region. Excludes San Benito County; only a small and relatively unpopulated portion of the county is located within the hydrologic region.

[b] Kern County also in the South Lahontan Hydrologic Region; Fresno County also in San Joaquin River Hydrologic Region.

Notes: n/a = not available; Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

### 30.1.3.7 South Lahontan Hydrologic Region

The South Lahontan Hydrologic Region includes the interior drainage basins east of the Sierra Nevada crest, south of the Walker River watershed, northeast of the Transverse Ranges, and north of the Colorado River Hydrologic Region. The main basins are the Owens and the Mojave river basins. **Table 30-12** presents the current and projected populations of counties wholly or partially within the region. **Figure 30-15** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in the South Lahontan Hydrologic Region. As shown in Table 30-3, this region has the second largest land area (approximately 26,732 square miles) among the affected regions, covering approximately 16.9 % of the state. In 2010, this region had the second lowest total population among affected regions and the lowest population density. DWR projections indicate that by 2050 the population will increase by approximately 1.5 million people, a 165 % increase relative to 2010 population (DWR 2009; ESRI 2011) The South Lahontan and Colorado regions comprise the

southeastern portion of California and contain the most arid lands in the state. Major cities within the region include Victorville, Palmdale, and Lancaster within the high desert areas at the margins of the Los Angeles metropolitan area.

The following characterizes water use in the region:[13]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supplies, including outflows from the region, was approximately 690 TAF, of which surface water constituted 29 %, groundwater constituted 59.3 %, and recycled water constituted about 11.7 %.
- **SWP and CVP Contractors in Region. Figure 30-16** depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors in the region serving M&I uses include Antelope Valley-East Kern Water Agency, Crestline-Lake Arrowhead Water Agency, Palmdale Water District, and Mojave Water Agency. There are no CVP contractors serving M&I uses that meet the minimum threshold in the region.
- **SWP and CVP Deliveries.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), average annual SWP water deliveries constituted 12.5 % (86 TAF) of supplies. The region received no CVP deliveries.
- **Current Applied Water Use.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 690 TAF, of which urban use constituted 36.4 %, agricultural use constituted 50.5 %, and environmental uses (including instream flows) constituted 13.1 %.
- **Projected Water Use.** DWR projections indicate that water demand for the South Lahontan Hydrologic Region is expected to increase (DWR 2009). Assuming current trends in water use, demand in year 2025 is expected to rise by 31.7 % relative to annual water use in the reporting period (1998–2005). This projection suggests an additional 218.8 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 15.1 % increase, while the Expansive demand scenario indicates a 59.9 % increase in 2025 (DWR 2009). DWR projections also indicate that water demand for the South Lahontan Hydrologic Region would increase in 2050. Assuming current trends, demand is expected to rise by 57.9 % relative to baseline reporting period average annual water demand. This projection suggests an additional 399.6 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 1.9 % decrease, while the Expansive demand scenario indicates a 132.2 % increase in 2050 (DWR 2009).



[13] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 10-2, South Lahontan Hydrologic Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 10, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

**Table 30-12. Current and Projected Populations of Counties[a] Within the South Lahontan Hydrologic Region**

| | Inyo | Kern | Los Angeles | Mono | San Bernardino[b] |
|---|---|---|---|---|---|
| 2000 | 18,193 | 665,308 | 9,575,838 | 12,806 | 1,722,378 |
| 2008 | 18,011 | 823,550 | 10,347,437 | 13,726 | 2,060,722 |
| 2020 | 20,495 | 1,086,113 | 11,214,237 | 18,080 | 2,581,371 |
| 2025 | 21,351 | 1,215,857 | 11,593,214 | 20,401 | 2,773,588 |
| 2050 | 25,112 | 2,106,024 | 13,061,787 | 36,081 | 3,662,193 |
| 2060 | n/a | n/a | 13,615,773 | n/a | 3,897,223 |
| **2000–2008** | | | | | |
| Numerical Change | -182 | 158,242 | **771,599** | 920 | 338,344 |
| Percent Growth | -1.0 | **23.8** | 8.1 | 7.2 | 19.6 |
| Average Annual Growth Rate | -0.1 | 3.0 | 1.0 | 0.9 | 2.5 |
| **2008–2025** | | | | | |
| Numerical Change | 3,340 | 392,307 | **1,245,777** | 6,675 | 712,866 |
| Percent Growth | 18.5 | 47.6 | 12.0 | **48.6** | 34.6 |
| Average Annual Growth Rate | 1.1 | 2.8 | 0.7 | 2.9 | 2.0 |
| **2025–2050** | | | | | |
| Numerical Change | 3,761 | 890,167 | **1,468,573** | 15,680 | 888,605 |
| Percent Growth | 17.6 | 73.2 | 12.7 | **76.9** | 32.0 |
| Average Annual Growth Rate | 0.7 | 2.9 | 0.5 | 3.1 | 1.3 |
| **2050–2060** | | | | | |
| Numerical Change | n/a | n/a | 553,986 | n/a | 235,030 |
| Percent Growth | n/a | n/a | 4.2 | n/a | **6.4** |
| Average Annual Growth Rate | n/a | n/a | 0.4 | n/a | 0.6 |

[a] Includes counties wholly or partially within the South Lahontan Hydrologic Region.

[b] San Bernardino County also in the South Coast and Colorado River Hydrologic Regions; Los Angeles County also in the South Coast Hydrologic Region. Kern County also in the Tulare Lake Hydrologic Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

### 30.1.3.8 Colorado River Hydrologic Region

The Colorado River Hydrologic Region includes basins south and east of the South Coast and South Lahontan Hydrologic Regions, areas that drain into the Colorado River and areas that drain into the Salton Sea and other closed basins north of the border with Mexico. **Table 30-13** presents the current and projected populations of counties wholly or partially within the region. **Figure 30-17** depicts recent changes in urban growth (changes in population density between 1990 and 2010) in

the Colorado River Hydrologic Region. The South Lahontan and Colorado River Hydrologic Regions comprise the southeastern portion of California and contain the most arid lands in the state. As shown in Table 30-3, this region has the third largest land area (approximately 19,962 square miles) among the affected regions. In 2010, this region had the lowest total population in the state and the second lowest population density. DWR projections indicate that by 2050 the population will increase by approximately 1.5 million people, a 178 % increase relative to 2010 population (DWR 2009; ESRI 2011. Major cities in the region are located within the Coachella Valley and include Palm Springs, Cathedral City, Palm Desert, Rancho Mirage, and Indio.

The following characterizes water use in the region:[14]

- **Supplies.** For the time period of 1998–2005 (the baseline reporting period for Bulletin 160-09), the annual average total dedicated water supplies, including outflows from the region, was approximately 4,612.8 TAF, of which surface water constituted 83 %, groundwater constituted 9.6 %, and recycled water constituted 7.4 %. Compared to the other hydrologic regions, surface water comprised the highest percent and groundwater the lowest percent of the Colorado River Hydrologic Region's water supply.
- **SWP and CVP Contractors in Region. Figure 30-18** depicts SWP and CVP contractor service areas in the region (see Table 30-6 for key to contractor service area identification numbers). SWP contractors in the region serving M&I uses include Mojave Water Agency, Coachella Valley Water District, and Desert Water Agency. There are no CVP contractors serving M&I uses that meet the minimum threshold in the region.
- **SWP and CVP Deliveries.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), average annual SWP water deliveries constituted 1.6 % (75.6 TAF) of supplies. The region received no CVP deliveries.
- **Current Applied Water Use.** For the time period of 1998–2005 (the baseline reporting years for Bulletin 160-09), annual total applied water use, including outflows from the region, was approximately 4,612.8 TAF, of which urban use constituted 14.2 %, agricultural use constituted 85.1 %, and environmental uses (including instream flows) constituted 0.7 %.
- **Projected Water Use.** DWR projections indicate that water demand for the Colorado River Hydrologic Region is expected to decrease by the year 2025 (DWR 2009). Assuming current trends in water use, demand is expected to decrease by 21.3 % relative to annual water use in the reporting period (1998–2005). This projection suggests a reduction of 983.2 TAF of water demand in 2025. For comparison, the Slow and Strategic demand scenario indicates a 26 % decrease, while the Expansive demand scenario indicates a 18.7 % decrease in 2025 (DWR 2009). DWR projections also indicate that water demand for the Colorado River Hydrologic Region would decrease in 2050. Assuming current trends, demand is expected to decrease 18 % relative to baseline reporting period average annual water demand. This projection suggests a reduction of 830.1 TAF of water demand in 2050. For comparison, the Slow and Strategic demand scenario indicates a 32.6 % decrease, while the Expansive demand scenario indicates an 8.2 % decrease in 2050 (DWR 2009).

[14] Unless otherwise noted, data in this section are taken from Year 2000 Applied Water Use in Table 11-9, Colorado River Region Water Use and Distribution of Dedicated Supplies – TAF, in Chapter 11, Volume 3 of the California Water Plan Update 2005 (DWR 2005), DWR 2009, and DWR 2010a.

**Table 30-13. Current and Projected Populations of Counties[a] Within the Colorado River Hydrologic Region**

| | Imperial | Riverside[b] | San Bernardino[b] | San Diego[b] |
|---|---|---|---|---|
| 2000 | 143,763 | 1,559,039 | 1,721,942 | 2,836,303 |
| 2008 | 189,675 | 2,239,053 | 2,177,596 | 3,199,706 |
| 2020 | 239,149 | 2,904,848 | 2,581,371 | 3,550,714 |
| 2025 | 261,510 | 3,204,859 | 2,773,588 | 3,752,483 |
| 2050 | 387,763 | 4,730,922 | 3,662,193 | 4,508,728 |
| 2060 | n/a | 5,188,332 | 3,897,223 | 4,705,967 |
| **2000–2008** | | | | |
| Numerical Change | 45,912 | **680,014** | 455,654 | 363,403 |
| Percent Growth | 31.9 | **43.6** | 26.5 | 12.8 |
| Average Annual Growth Rate | 4.0 | 5.5 | 3.3 | 1.6 |
| **2008–2025** | | | | |
| Numerical Change | 71,835 | **965,806** | 595,992 | 552,777 |
| Percent Growth | 37.9 | **43.1** | 27.4 | 17.3 |
| Average Annual Growth Rate | 2.2 | 2.5 | 1.6 | 1.0 |
| **2025–2050** | | | | |
| Numerical Change | 126,253 | **1,526,063** | 888,605 | 756,245 |
| Percent Growth | **48.3** | 47.6 | 32.0 | 20.2 |
| Average Annual Growth Rate | 1.9 | 1.9 | 1.3 | 0.8 |
| **2050–2060** | | | | |
| Numerical Change | n/a | **457,410** | 235,030 | 197,239 |
| Percent Growth | n/a | **9.7** | 6.4 | 4.4 |
| Average Annual Growth Rate | n/a | 1.0 | 0.6 | 0.4 |

[a] Includes counties wholly or partially within the Colorado River Hydrologic Region.

[b] San Bernardino County also in the South Coast and South Lahontan Hydrologic Regions; Riverside and San Diego counties also in the South Coast Hydrologic Region.

Notes:

n/a = not available

Numbers in bold indicate largest net and percent increase.

Sources: DOF 2007a; DOF 2007b; DOF 2008

# 30.2 Regulatory Setting

The CEQA Guidelines (Section 15126.2(d)) require that an EIR evaluate the growth-inducing impacts of a project. The EIR must:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the

environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Economic growth refers to the extent that a project could cause increased activity in the local or regional economy. Economic and population growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity and job growth in the area. Elimination of obstacles to growth refers to the extent to which a project removes infrastructure limitations or regulatory constraints. For example, an increase in the capacity of utility or road infrastructure installed as part of a project could allow additional development in the surrounding areas. Increases in population may tax existing community service facilities, thus requiring new facilities to be built, the construction and operation of which could cause potentially significant environmental impacts.

As stated in CEQA Guidelines Section 15126.2(d), a project can have direct and/or indirect growth inducement potential. A project would result in direct growth if it involved construction of new development that supported new population. A project would cause indirect growth if it, for example, established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises); and/or involved a construction effort with substantial employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand.

NEPA also requires the analysis of growth-inducing impacts. Under NEPA, growth-inducing effects are a subset of indirect effects, which are defined as effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 Code of Federal Regulations [CFR] Section 1502.16(b), 40 CFR Section 1508.8(b)). Pursuant to NEPA, the federal lead agencies [Bureau of Reclamation (Reclamation), U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)] are required to identify the likely environmental consequences of proposed changes in water use, and this information must be considered in their decision making.

Growth that is induced by a project may be consistent with adopted local or regional land use plans; as such, the secondary effects of such planned growth would have been identified and evaluated through a formal CEQA environmental review process and, as necessary, mitigation would have been adopted to address these effects. If a project would have growth inducement potential that is not consistent with the land use plans and growth management plans and policies for the area affected (e.g., growth beyond that reflected in adopted plans and polices), then additional adverse secondary effects of growth beyond those previously evaluated could occur. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, utilities, wastewater, and solid waste service. This urban development may have environmental impacts, as identified in CEQA documents prepared for adoption of local land use plans. A project that would induce "disorderly" growth that conflicts with local land use plans could indirectly cause additional adverse environmental impacts and impacts on other public services. Thus, it is important to assess the degree to which the growth associated with a project would or would not be consistent with applicable land use plans.

# 30.3 Environmental Consequences

## 30.3.1 Methods for Analysis

This section describes the methods and key assumptions used to determine the growth inducement potential of the BDCP alternatives. This analysis relied in part on the modeling effort that estimated SWP and CVP deliveries under each scenario for each alternative. Chapter 4, *Approach to the Environmental Analysis*, provides a brief overview of the modeling tools and outputs; Appendix 4A, *Modeling Technical Memorandum*, provides a full description of the modeling efforts.

### 30.3.1.1 Direct Growth Inducement Potential

To determine direct growth inducement potential, the project was evaluated to determine if the proposed project and alternatives would result in the construction of new development that would support new population. The proposed project and alternatives involve the construction and operation of water supply conveyance facilities and not development, such as new housing, that would support new population. Construction of the water conveyance facilities would occur in and around the Delta, adjacent to the cities of Sacramento and Stockton, and in East Bay urban areas and would require a work force located in the proximity of the construction sites for the duration of the construction phase. It is likely that construction workers would commute from these areas daily to construction sites. Given the location of proposed facilities, anticipated construction duration, and availability of labor and housing proximate to proposed facility locations, it is assumed that the work force would be drawn from the existing labor pool in the project area and would not result in the relocation of workers to the project sites resulting in an increase in population. Therefore, it is assumed that construction of proposed project facilities would not require the construction of new housing to support an increase in population or in associated growth inducement impacts. [*Note to reviewers: this is our working hypothesis, to be confirmed. If work by others – economist or staff involved in socioeconomic analysis – provides demographic data relative to construction locations, we will make use of that.*] Therefore, the growth analysis focused on the indirect growth inducement potential of the proposed project and alternatives.

### 30.3.1.2 Indirect Growth Inducement Potential

To determine indirect growth inducement potential, the proposed project and alternatives were evaluated for their potential to stimulate the need for additional housing and services by (1) increasing water deliveries to SWP/CVP contractors that could support additional population, (2) creating new permanent employment opportunities, and/or (3) creating substantial short-term employment demand that would indirectly stimulate the need for additional housing and services. Construction and implementation of new housing and services can result in adverse environmental impacts (such as increased traffic or noise levels).

In assessing the environmental impacts of changes in water use, numerous issues arise, including the following:

- What is the relationship between water supply and urban population growth?
- Is the urban growth a consequence of the project's water supply or would that growth occur anyway, even in the absence of project water?

The second question is particularly important in light of NEPA (not CEQA) requirements regarding the environmental baseline. If alternative water supplies to the Proposed Action are reasonably available (as supported by appropriate documentation), then population growth supported by the "no action" ("future without project") scenario (for this project, the NEPA baseline) is likely to be considered similar to the proposed project. In this case, there would be no need for a detailed discussion of issues and impacts that are not a consequence of the federal action under consideration. In situations where it is clear that growth is a result of project water supply, and these impacts can be attributed to the federal action, detailed descriptions of the impacts must be provided in the NEPA document.

The growth associated with identified additional population was assessed for consistency with applicable land use plans and associated environmental clearance documents. The steps involved in the assessment of potential for implementation of the proposed project or alternatives to indirectly induce growth are presented below. [*Note to Reviewers: some of the information summarized below to be included in the environmental consequences section is incomplete because it is dependent on the modeling results which were not available for this submittal but the information and analysis will be completed for the second administrative draft.*]

- **Identify Study Area.** For purposes of this analysis, the study area comprises areas that could receive increased SWP/CVP deliveries associated with implementation of the BDCP ("project water").
- **Characterize Water Use and Growth Trends.** Sections 30.1, 30.2, and 30.3 characterize urban development and water use trends at the state, regional, and local level, and characterize, among other things, past and future (to 2050) forecast changes in population and water use. This information provided a basis for defining the "existing" (2007) conditions for the evaluation of growth inducing impacts, and for characterizing the No-Action Alternative. [*Note to reviewers: confirmation of baseline year is dependent on the assumption used for the CALSIM II modeling and will be updated, as necessary.*]
- **Identify Changes in Water Deliveries Associated with the Alternatives.** Indirect growth could occur if an alternative were to result in increases in deliveries of reliable water supplies. Based on the results of modeling conducted for the SWP/CVP, those alternatives and scenarios that could increase deliveries and water supply reliability for contractors were identified, as well as the quantities associated with those increases.
- **Characterize Regional Growth Inducement Potential.** For this analysis, we identified all SWP/CVP contractors serving urban uses and characterized growth inducement potential at the regional level based on modeling results.
- **Select Contractor Service Areas for In-Depth Consideration.** The growth inducement analysis presents conclusions based on regional increases in SWP/CVP water supplies for urban uses. However, the majority of water supply planning for urban areas occurs at the local water wholesaler and retailer level. On the basis of projected increases in water demand and population, representative SWP and/or CVP contractor service areas were selected to assist in developing more in-depth profiles of the proposed project's growth inducement potential.
- **Characterize Future Growth Under the No-Action Alternative.** On the basis of information presented in Sections 30.1 through 30.3 and other published data, the analysis investigated whether growth would result from project water or whether the growth would occur anyway, without project water. The analysis addressed the major factors driving changing patterns in

urban demand for surface water (e.g., increased conservation, increased water recycling, and drought events), and the likely continuing decline in per capita use.

- **Assess Consistency with Applicable Land Use Plans.** If the analysis concluded that the proposed project or alternatives could induce, or remove an obstacle to, growth, then the analysis attempted to determine whether that level of growth would be consistent with adopted local and regional plans. If the growth would be consistent with adopted local and regional plans, then the measures to reduce or avoid the environmental impacts associated with that growth likely are in place through the adoption of findings and mitigation monitoring and reporting programs following completion of the CEQA process on the plans. If the proposed project or alternatives would induce growth in excess of levels planned for in local land use plans, then they could indirectly cause additional adverse environmental impacts and impacts on other public services (e.g., transportation, wastewater service).
- **Characterize the Secondary Effects of Growth Potentially Induced by the Project Alternatives and Mitigation Programs and Measures.** The study area encompassed numerous cities and counties. For this analysis, multiple published CEQA documents and other reports that have evaluated growth within representative cities and counties were reviewed and their findings summarized to help characterize adverse physical environmental effects potentially attributable to induced growth. In addition, programs and plan or project-specific mitigation measures adopted to address secondary effects of growth are summarized to indicate who has responsibility for addressing secondary effects of growth and how these effects are being addressed.

### 30.3.1.3 Key Assumptions

The key assumptions used in the analysis of indirect growth inducement potential are discussed below.

#### Water Availability and Use

- **Future Water Deliveries.** The level of detail of this analysis corresponded to the level of detail currently available with respect to water deliveries under the project alternatives. Implementation of some alternatives would increase the water delivery capacity of the SWP/CVP (see Section 30.6, *Effects Analysis*), potentially allowing contractors to receive more water relative to existing delivery conditions and/or the No-Action Alternative. [*Note to Reviewers: this information to be included in the environmental consequences section is incomplete because it is dependent on the modeling results which were not available for this submittal but the information and analysis will be completed for the second administrative draft.*]
- **Project Water Use within the Study Area.** This analysis conservatively assumed that any contractors receiving project water would allocate the new supply to urban growth rather than for other purposes (e.g., dry year reliability, groundwater overdraft protection, environmental water).
- **Future Changes in Consumption Patterns.** Recent changes in state law, and changing practices at the water contractor level, alter, and will continue to alter, water consumption patterns, likely lowering per-capita demand for imported surface water through increased conservation and water recycling. (For example, "Community X" has a population of 1,000 and in a normal water year uses 500 acre-feet of water. Community X reduces water consumption to 400 acre-feet per year by implementing an ordinance that mandates cutbacks in landscape

irrigation, so now just 400 acre-feet per year of water is needed to support 1,000 people.) The extent to which decreases in per-capita consumption of imported surface water could change the amount of growth that could be supported by project water was explored as part of the No-Action Alternative.

- **Transfers from Agricultural to Urban Uses.** For purpose of this analysis, the transfer of agricultural water to M&I contractors was considered an ongoing action that will continue independent of changes in the SWP/CVP deliveries associated with the proposed project or alternatives. Such transfers would be subject to separate analysis under CEQA and NEPA as applicable. With respect to the SWP, authority for such transfers exists under the SWP contracts. CEQA evaluation and subsequent approval of permanent transfers from agricultural contractors to M&I contractors has already occurred for a number of transfers. In 1994, DWR and certain representatives of the SWP contractors agreed to a set of principles known as the Monterey Agreement, to settle long-term water allocation disputes, and to establish a new water management strategy for the SWP. The Monterey Agreement resulted in 27 of the 29 SWP contractors signing amendments to their long-term water supply contracts in 1995, and the Monterey Amendment has been implemented as part of SWP operations for these 27 SWP contractors since 1996.

  The original EIR prepared for the Monterey Agreement was challenged, and the EIR was required to be decertified. A settlement agreement with the plaintiffs was signed in May 2003, and DWR subsequently prepared a new EIR on the Monterey Amendment (also covering certain actions under the Settlement Agreement). DWR certified the Final EIR in May 2010 and issued a Notice of Determination that DWR would continue implementing the water supply contracts pursuant to the Monterey Amendment.

  The Final EIR, referred to as the Monterey Plus EIR (Department of Water Resources 2010b), included analysis of the requirement of the Monterey Amendment to permanently transfer 130 TAF from agricultural contractors to M&I contractors. Specifically, Article 53 of the SWP contract provides that agricultural contractors (Kings County, Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency, Oak Flat Water District, and Tulare Lake Basin Water Storage District) will make available 130 TAF and related conveyance capacity for permanent transfer to M&I contractors or non-contractors pursuant to Article 41 of the SWP contracts on a willing buyer and willing seller basis (Department of Water Resources 2010b). Other transfers before and after the transfer of the 130 TAF have been and will be subject to separate CEQA documentation.

  One impact of Monterey Amendment operations on Delta exports and growth inducement is identified in the Monterey Plus EIR as the facilitation of approval for out-of-service-area storage programs. These exports for storage can only occur if the rate of Delta exports is within permitted limits at the time. The use of such out-of-service-area storage programs was determined to increase water supply reliability and to have potential growth-inducing effects, which are addressed in detail in the Monterey Plus EIR. The action adopted by DWR would not increase diversions above currently permitted levels and exports would continue to be subject to whatever regulatory restrictions are in force at the time.

  The other aspects of the Monterey Amendment are described in detail in the Monterey Plus EIR documents.

- ***Contractor Participation*** – [*Note to Reviewers: level of detail regarding contractor participation and potential opt-out ramifications to be determined.*]

### Projections

- ***Changes in Projected Growth.*** Projections necessarily entail the use of assumptions about factors that cannot be known or predicted with absolute certainty. Development trends could occur more slowly or in different patterns than characterized in the projections. This analysis reflected the California Department of Finance's best efforts to disclose expectations regarding future growth in the study area consistent with CEQA and NEPA.

## 30.1.1 Effects and Mitigation Approaches

### 30.3.1.4 Summary of Growth Inducement Potential

[*Note to Reviewers: This section will summarize the conclusions of the analysis with respect to the growth inducement potential associated with the alternatives. It will distinguish conclusions based on the NEPA baseline (the No Project/No Action Alternative) and CEQA baseline (existing conditions) and summarize the relationship between local land use decision authority (including mitigation of associated impacts) and DWR/Reclamation authority. This section is incomplete because it is dependent on the modeling results which were not available for this submittal but the analysis will be completed for the second administrative draft.*]

### 30.3.1.5 Summary of Modeling Results

[*Note to Reviewers: The information in the tables below was based on summary of modeling results provided to ESA in December 2010. The format and the information in the tables will be revised once the modeling results are available. The modeling results were not available for this submittal but the information will be completed for the second administrative draft.*]

The sections below highlight select changes in water deliveries associated with the alternatives. Chapter 3, "Description of Alternatives" provides a detailed description of the proposed alternatives under consideration in this EIR/EIS. For purposes of analyzing the project's potential to induce growth, this analysis focuses on long-term annual average deliveries. Information on below normal and dry year deliveries is also presented; many contractors have sufficient water supplies during normal water years but lack reliable supplies during dry years and, in these cases, an increase in supply during dry years could remove an obstacle to growth.

#### No Action Alternative

The table below indicates the following [*Note to reviewers: This discussion includes data provided in December 2010 and is an example of how the information will be presented and used. As previously stated, because the modeling results were not available at the time of this submittal, this analysis is incomplete. The information will also be updated to present the CALSIM II results by hydrologic region and by CVP and SWP contractor. The tables and discussions for each of the alternatives will be updated, including format, and completed for the second administrative draft*]:

- **State Water Project.** Long-term average annual deliveries during normal years would increase relative to 2007 deliveries by approximately 107 thousand acre feet in 2025 (a 4 percent increase) but decrease by approximately 15 TAF in 2060 (a 0.5 percent decrease).

- **CVP North of Delta.** Long-term average annual deliveries during normal years would increase relative to 2007 deliveries by approximately 112 TAF in 2025 (a 137 percent increase) and by approximately 107 TAF in 2060 (a 126 percent increase).
- **CVP South of Delta.** Long-term average annual deliveries during normal years would decrease relative to 2007 deliveries by approximately 4 TAF in 2025 (a 3 percent decrease) and decrease by approximately about 11 TAF in 2060 (a 10 percent decrease).

**Table 30-14. No Action Alternative: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| SWP | 3,114 | ***3,235*** | ***107*** | **3.9** | 3,099 | -15 | -0.5 |
| CVP – North of Delta | 85 | ***201*** | ***112*** | **136.5** | ***192*** | ***107*** | **125.9** |
| CVP – South of Delta | 116 | 112 | -4 | -3.4 | 105 | -11 | -9.5 |
| Below Normal | | | | | | | |
| SWP | 3,241 | ***3,374*** | ***133*** | **4.1** | ***3,291*** | ***50*** | **1.5** |
| CVP – North of Delta | 86 | ***198*** | ***112*** | **130.2** | ***186*** | ***100*** | **116.3** |
| CVP – South of Delta | 111 | 108 | -3 | -2.7 | 105 | -6 | -5.4 |
| Dry | | | | | | | |
| SWP | 3,026 | 2,871 | -155 | -5.1 | 2,598 | -428 | -14.1 |
| CVP – North of Delta | 80 | ***175*** | ***95*** | **118.8** | ***161*** | ***81*** | **101.3** |
| CVP – South of Delta | 107 | 100 | -7 | -6.5 | 93 | -14 | -13.1 |

Source: HDR 2010.
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 1A— Dual Conveyance with Tunnel and Intakes 1–5

The table below indicates the following:

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-15. Alternative 1A: Dual Conveyance with Tunnel and Intakes 1–5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 1B —Dual Conveyance with East Canal and Intakes 1–5

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-16. Alternative 1B: Dual Conveyance with East Canal and Intakes 1–5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 1C —Dual Conveyance with West Canal and Intakes W1–W5 [intake numbers subject to change]

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-17. Alternative 1C: Dual Conveyance with West Canal and Intakes W1–W5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 2A— Dual Conveyance with Tunnel and Five Intakes

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-18. Alternative 2A: Dual Conveyance with Tunnel and Five Intakes: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 2B—Dual Conveyance with East Canal and Five Intakes

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-19. Alternative 2B: Dual Conveyance with East Canal and Five Intakes: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 2C —Dual Conveyance with West Canal Intakes W1–W5

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-20. Alternative 2C: Dual Conveyance with West Canal Intakes W1–W5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 3—Dual Conveyance with Tunnel and Intakes 1 and 2

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-21. Alternative 3: Dual Conveyance with Tunnel and Intakes 1 and 2: Annual Deliveries in TAF1**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 4—Dual Conveyance with Tunnel and Intakes 1–3

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-22. Alternative 4: Dual Conveyance with Tunnel and Intakes 1–3: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 5—Dual Conveyance with Tunnel and 3,000 cfs Diversion

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-23. Alternative 5: Dual Conveyance with Tunnel and 3,000 cfs Diversion: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 6A— Isolated Conveyance with Tunnel and Intakes 1–5

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-24. Alternative 6A: Isolated Conveyance with Tunnel and Intakes 1–5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 6B —Isolated Conveyance with East Canal and Intakes 1–5

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-25. Alternative 6B: Isolated Conveyance with East Canal and Intakes 1–5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 6C —Isolated Conveyance with West Canal and Intakes W1–W5 [intake numbers subject to change]

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-26. Alternative 6C: Isolated Conveyance with West Canal and Intakes W1–W5: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 7 —Dual Conveyance with Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-27. Alternative 7: Dual Conveyance with Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 8—Dual Conveyance with Tunnel and Increased Delta Outflow

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-28. Alternative 8: Dual Conveyance with Tunnel and Increased Delta Outflow: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## Alternative 9—Separate Corridors

Text summarizing changes in delivery, reliability for

- Hydrologic Region
- SWP Contractors
- CVP Contractors

**Table 30-29. Alternative 9: Separate Corridors: Annual Deliveries in TAF[1]**

| | Existing | Early Long Term | | | Late Long Term | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2025 | Net Change | Percent Change | 2060 | Net Change | Percent Change |
| Long Term – Annual Average | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Below Normal | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |
| Dry | | | | | | | |
| Hydrologic Regions | | | | | | | |
| SWP Contractors | | | | | | | |
| CVP Contractors | | | | | | | |

Source:
Numbers in ***Bold Italics*** indicate water quantities that exceed existing conditions.
[1] TAF = thousand acre-feet.

## 30.3.2 Potential for Increases in Water Deliveries to Remove Obstacle to Growth

### 30.3.2.1 No Action Alternative

**[REVIEWERS: This section will be provided with subsequent submittal. The Demand Management memo includes information we intended to provide here, but now we'll cross-reference to the appendix likely to contain information on demand management. We are preparing a graph depicting recent trends in water demand and growth but are encountering data gaps.]**

Identify, based on data presented in setting and published reports, potential for growth to occur irrespective of increases in water deliveries associated with Alternatives 1 through 5.

- Graph past, future projected changes in water use and population for select areas and potentially contractors to illustrate dynamics of population/water relationship.

### 30.3.2.2 Alternatives X through Y [Alternatives that would increase deliveries under normal, long term annual average conditions]

- **[Reviewers: this discussion will be completed once the modeling data is provided. Modeling results were not available at the time of this submittal but the discussion will be completed for the second administrative draft]**
- Summarize potential increases in deliveries to contractors under each alternative (1 A–C, 2 A–C, 3, 4, 5, 6 A–C, 7, 8, 9), long-term annual average basis, (a) relative to existing conditions, (b) relative to No Project/No Action Alternative.

- Discuss relative growth inducement potential of each alternative based on increases in water deliveries. Consider side bar on per capita water usage; disclose variability among/within contractor service areas [varies considerably; will continue to change]

## 30.3.3 Growth Inducement Potential by Region

- **[Note to reviewers: this discussion will be completed once the modeling data is provided by hydrologic region. Modeling results were not available at the time of this submittal but the discussion will be completed for the second administrative draft]**
- Characterizing regional growth inducement impacts will depend on the level of detail available in the modeling results and other information made available regarding which SWP and CVP contractors get more water under what alternative. Only those regions/alternatives where modeling indicates increases in deliveries will be discussed.
- Regional growth patterns and potential (areas that are built out, areas that are expanding, etc.) could be highlighted within each "water gaining" region.

### 30.3.3.1 Growth Inducement Potential – South Coast Region

As described in Section 30.4.5, DWR projections indicate that by 2050 the South Coast Hydrologic Region will experience the largest net population growth among affected regions with population increasing by approximately 7 million people, a 35% increase relative to 2010 population (DWR 2009; ESRI 2011). This region contains parts of Los Angeles, Riverside, San Bernardino, and Ventura Counties, and all of Orange County. **[Note to reviewers: We will prepare this section once we see modeling results and can better determine whether we would recommend characterization based on hydrologic region or major metropolitan area. Either way, we expect Southern California to be a focus, and that we would bring in data from SCAG to help characterize in greater detail existing and projected levels of development within a region, areas that are built out/expanding, etc. Below is a brief description of SCAG and a table indicating cities and subregions with the highest projected increases in population based on SCAG's latest (2008) projections. Will use latest projections prior to Draft EIR/S publication.]**

***Southern California Association of Governments (SCAG)***

SCAG functions as the Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, and Ventura Counties. SCAG is mandated by the federal government to research and develop plans for transportation, growth management, and other resources of regional importance. SCAG is responsible for developing population and employment forecasts for the six-county region (SCAG 2011). SCAG's population, housing unit, and employment forecasts are the accepted standard in the region and are used in plans produced by city and county governments, transportation and air quality planning agencies, and special districts. SCAG's most recent forecasts were published in 2008, and are presented in **Table 30-30**.

**Table 30-30. SCAG Population Projections Cities and Subregions[a] with Highest Projected Population Increase**

| County | Subregion | City | Population 2005 | Population 2030 | Increase 2005–2030 | Percent Increase 2005–2030 |
|---|---|---|---|---|---|---|
| Los Angeles County | Arroyo Verdugo | Burbank | 106,493 | 129,390 | 22,897 | 22% |
| | City of Los Angeles | Los Angeles | 3,955,392 | 4,348,281 | 392,889 | 10% |
| | Gateway Cities | Long Beach | 489,427 | 559,598 | 70,171 | 14% |
| | Las Virgenes | Unincorporated | 21,341 | 30,529 | 9,188 | 43% |
| | | Calabasas | 23,186 | 27,603 | 4,417 | 19% |
| | North Los Angeles County | Unincorporated | 132,797 | 389,595 | 256,798 | 193% |
| | | Palmdale | 138,423 | 329,321 | 190,898 | 138% |
| | San Gabriel Association of Cities | Unincorporated | 364,836 | 500,358 | 135,522 | 37% |
| | | Pomona | 160,852 | 208,144 | 47,292 | 29% |
| | South Bay Cities Association | Hawthorne | 88,360 | 112,119 | 23,759 | 27% |
| | Westside Cities | Unincorporated | 29,068 | 39,214 | 10,146 | 35% |
| | | Beverly Hills | 35,783 | 38,113 | 2,330 | 7% |
| Riverside | Coachella Valley Association of Governments | Unincorporated | 75,335 | 320,950 | 245,615 | 326% |
| | | Coachella | 33,268 | 104,703 | 71,435 | 215% |
| | | Desert Hot Springs | 20,874 | 65,723 | 44,849 | 215% |
| | Western Riverside Council of Governments | Unincorporated | 435,178 | 783,622 | 348,444 | 80% |
| | | Riverside | 288,977 | 372,782 | 83,805 | 29% |
| | | San Jacinto | 30,008 | 92,177 | 62,169 | 207% |
| | | Beaumont | 21,242 | 74,686 | 53,444 | 252% |
| | | Calimesa | 7,490 | 25,504 | 18,014 | 241% |
| San Bernardino | San Bernardino Associated Governments | Unincorporated | 305,837 | 462,447 | 156,610 | 51% |
| | | Ontario | 170,951 | 308,088 | 137,137 | 80% |
| | | Hesperia | 78,284 | 191,186 | 112,902 | 144% |
| | | Victorville | 90,913 | 168,134 | 77,221 | 85% |
| | | Adelanto | 24,156 | 100,814 | 76,658 | 317% |
| | | Barstow | 23,601 | 62,593 | 38,992 | 165% |
| | | Twentynine Palms | 27,442 | 63,488 | 36,046 | 131% |
| Orange | Orange County | Unincorporated | 118,994 | 236,469 | 117,475 | 99% |
| | | Anaheim | 339,915 | 425,781 | 85,866 | 25% |
| | | Irvine | 191,808 | 268,246 | 76,438 | 40% |
| Ventura | Ventura Council of Governments | Oxnard | 189,161 | 265,752 | 76,591 | 40% |
| | | San Buenaventura (Ventura) | 106,260 | 131,050 | 24,790 | 23% |
| Imperial | Imperial Valley Association of Governments | Unincorporated | 35,465 | 90,016 | 54,551 | 154% |
| | | Calexico | 36,485 | 63,628 | 27,143 | 74% |
| | | Brawley | 24,751 | 49,996 | 25,245 | 102% |
| | | El Centro | 41,492 | 66,705 | 25,213 | 61% |
| | | Imperial | 9,847 | 19,974 | 10,127 | 103% |

[a] Where the unincorporated area is projected to experience the most growth in a county, it is shown in the table in addition to the city or cities having the greatest projected growth. The cities with the greatest projected growth are shown for LA and Riverside Counties.

Source: SCAG 2008.

## 30.3.4 Profiles of Representative Contractors Potentially Receiving Increased Deliveries

- [Note to r**eviewers: this discussion will be completed once the modeling data is provided by SWP and CVP contractor. We will then be able to confirm which contractors to choose to profile. Modeling results were not available at the time of this submittal but the discussion will be completed for the second administrativedraft]**

### 30.3.4.1 Screening Criteria Used to Select Contractor Profiles for Impact Analysis

- SWP Contractors with Largest Projected Population Growth (net and percent)
  - Identify SWP Contractors Service Areas with Little or No Growth
- CVP Contractors with Largest Projected Population Growth (net and percent)
  - Identify North of Delta CVP Contractors Service Areas with Little or No Growth

### 30.3.4.2 Metropolitan Water District [TO BE CONFIRMED]

- Urban Growth Within Contractor Service Area
  - Land Use jurisdictions within Contractor Service Area
  - Consistency of Planning Agency, Urban Water Management Plan Projections
    - Briefly address in a side bar the gap that often occurs between general plan horizon years and UWMP/water supply planning horizon years – why it exists [takes many years to develop water supplies, need more lead time], implications for determining consistency.
- Projected Water Demand Within Contractor Service Area

### 30.3.4.3 Santa Clara Valley Water District [TO BE CONFIRMED]

- Urban Growth Within Contractor Service Area
  - Land Use jurisdictions within Contractor Service Area
  - Consistency of Planning Agency, Urban Water Management Plan Projections
- Projected Water Demand Within Contractor Service Area

### 30.3.4.4 Water Supply Contractor to be Determined [CVP Contractor Serving Most M&I Uses/With Largest Projected Population Growth]

- CVP Contractors with Largest Projected Population Growth (net and percent)
  - Identify CVP Contractors Service Areas with Little or No Growth
- Urban Growth Within Contractor Service Area
  - Land Use jurisdictions within Contractor Service Area
- Projected Water Demand Within Contractor Service Area

## 30.3.5 Secondary Effects of Induced Growth

- Introduction: Growth induced by project water could adversely affect the physical environment. For this analysis, multiple published reports that have evaluated growth within representative cities and counties in the study area were reviewed and their findings summarized and supplemented to characterize adverse physical environmental effects potentially attributable to induced growth.

### 30.3.5.1 No Action/No Project Alternative

- State whether, based on analysis in Section 30.6.2.1, secondary effects of growth would occur irrespective of whether action alternatives are implemented.

### 30.3.5.2 Alternatives X through Y [Alternatives that would increase deliveries under normal, long term annual average conditions]

#### Secondary Impacts of Growth Identified in Jurisdictions' General Plan Environmental Impact Reports

[Note to reviewers: we will revise the structure of this section based on what we present in Section 30.6.3. Details to be determined.]

The cities and counties in the study area have adopted comprehensive, long term general plans for the physical development of their jurisdictions, and regional planning agencies have prepared projections of future growth in the area, as discussed in Section 30.2.2. Growth causes environmental impacts and, consistent with CEQA, cities and counties have prepared environmental impact reports (EIRs) on general plans that characterize the adverse physical changes expected to result from development.

To characterize potential secondary effects of planned growth in the study area, the EIRs shown in **Table 30-31** were reviewed. [**Note to Reviewers: Jurisdictions to be selected will reflect**]:

- SWP Contractor Service Areas:
  - Summarize in tables – [**Note to reviewers: example included -- environmental impacts of growth identified in General Plan EIRs of jurisdictions within representative contractor's service areas – Los Angeles and Bay Area [MWD, SCVWD]**]
- CVP Contractor Service Areas:
  - Summarize in table environmental impacts of growth identified in General Plan EIRs of jurisdictions within representative contractor's service area [TBD]

[Note to reviewers: the table on the following pages shows what we intend to do in terms of presenting, in summary format, the potential environmental effects of growth in service areas of the contractors we select to profile. In addition to the table, there will be paragraphs summarizing the types and nature of impacts identified as significant and unavoidable in the EIRs for the approved General Plans within the affected areas.]

- Visual and Aesthetic Resources
- Agricultural Resources
- Air Quality

- Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Mineral Resources
- Noise
- Population and Housing
- Recreation
- Traffic and Transportation
- Utilities and Public Services

**SAMPLE Table 30-31. Significant and Unavoidable Impacts Identified by General Plan Environmental Impact Reports in the Study Area**

| Resource Area/ Impact | Counties[a] | | | | Cities | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| Aesthetics | | | | | | | | | |
| Impacts | | | | | | | | | |
| Degradation of visual character. | | | | • | | | | • | • |
| Introduction of new sources of light or glare. | | • | | • | | | | | |
| Impacts to scenic highways. | | • | | | | | | | |
| Impacts to designated scenic resources in open space areas. | | • | | | | | | • | |
| Mitigation Measures | | | | | | | | | |
| Develop a Scenic Resources Overlay District. | | • | | | | | | | |
| Direct urban development and revitalization efforts to protect natural areas and areas with significant natural resource values (significant ecological areas, prime agricultural areas, scenic vistas). | | | | • | | | | • | |
| Promote park development; develop and conserve open space easement, natural features, and watershed areas. Concentrate growth in urban centers to limit urban expansion into scenic open spaces. | | • | | • | | | | | |
| Implement hillslope and ridgelines development guidelines and grading restrictions. | | • | | • | | | | | |
| Require compliance with lighting standards to preserve dark sky conditions. | | • | | • | | | | | |
| Require compliance with community design standards, which may include landscaping guidelines, building height restrictions, etc. | | | | • | | | | • | |
| Provide road and right-of-way development standards. | | | | • | | | | | |
| Require project level review and incorporation of mitigation as a condition of approval. | | | | | | | | | • |
| Require undergrounding of utilities. | | | | | | | | • | |
| Establish and enforce regulations to abate abandonment of vehicles, trash, equipment, or deteriorated structures. | | | | | | | | • | |
| Agricultural Resources | | | | | | | | | |
| Impacts | | | | | | | | | |
| Conversion of Important Farmland. | • | • | • | • | | • | | | • |
| Conflict with agricultural zoning or Williamson Act contract. | | | • | | | • | | | • |
| Mitigation Measures | | | | | | | | | |

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| Require project level review and appropriate mitigation. | | | | | | | | | • |
| Create buffers between new uses and existing adjacent agricultural uses | | | • | | | • | | | • |
| Consider acquisition of replacement acreage. | | | | | | • | | | |
| Consider relocation of prime topsoils. | | | | | | • | | | |
| Preserve, conserve, or create easements for important agricultural land. | • | • | • | | | • | | | |
| Avoid development on prime soils and avoid agricultural development on unsuitable soils. | • | • | | | | | | | |
| Allow development of prime agricultural land only after supplies of non-productive areas have been exhausted. | | • | | | | | | | |
| Enter into Williamson Act contracts or develop zoning designations to protect agricultural land. | • | • | • | | | | | | |
| Provide incentives, such as property tax relief for long-term farming operations or compensation for voluntarily limiting future development on agricultural land. | | • | • | | | | | | |
| Implement policies in the Conservation Element | | | • | | | | | | |
| Air Quality | | | | | | | | | |
| Impacts | | | | | | | | | |
| Conflict with air quality management plan. | | | | | | • | | | • |
| Violation of air quality standards. | | • | | • | • | • | | • | • |
| Cumulatively considerable net increase of criteria pollutants in non-attainment areas. | | | | • | • | • | | • | • |
| Increased exposure of sensitive receptors to pollutants. | | | | • | • | | | | |
| Increased objectionable odors, including diesel fumes. | | • | | | | • | | | |
| Long-term air emissions will occur from stationary sources. | | | • | | | • | | • | |
| Increased emissions from operations and vehicle miles traveled. | | | • | | | | • | • | • |
| Short-term construction-related impacts, including fugitive dust and PM 10. | | • | • | | | • | | | |
| Mitigation Measures | | | | | | | | | |
| Conform to the Transportation Improvement and Mitigation Plan. | | | | | • | | | | |
| Conform to the applicable local Air Quality Management Plan. | | • | | | • | | | • | |
| Develop alternative transportation options. | | | • | | | | | | |

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| Coordination with local AQMD and councils of government to develop and achieve air quality improvement goals. | | | | • | | • | | | |
| Promote energy conservation and design to reduce transportation demand. | | | | | | • | | | |
| Require new development to implement dust control measures (i.e. watering active sites, covering hauling trucks) during construction, including grading restrictions. | | • | • | • | | • | | | |
| Evaluate projects based on proximity to public transit. | | • | | • | | • | | | |
| Evaluate project compatibility with California Ari Resources Board Air Quality and Land Use Handbook. | | | • | | | • | | | |
| Implement policies established in the Environmental Resources Element and Circulation Element. | | | | | | | • | | |
| Develop and improve transit systems and vehicle trip reduction methods. | | • | • | | | • | • | | |
| Implement transportation management programs. | | | | | | | • | | |
| Implementation of best available control measures for projects that would exceed daily construction emissions. | | | | • | | | | | • |
| Condition project approval on mitigation plans. | | | | | | | | | • |
| Require buffers (i.e. trees, open space, sound walls) between sources and sensitive receptors. | | | | | | | | | • |
| Provide preferential parking for alternative fuel vehicles. | | • | | • | | | | | |
| Implement fueling standards to improve number of alternative fuel vehicles. | | | | • | | | | | |
| Provide incentives for siting or use of clean air technologies, such as renewable energy sources. | | | | • | | | | | |
| Prevent permitting for major sources. | | | | • | | | | | |
| Implement regional air quality standards to attain state standards. | | | | • | | | | | |
| Implementation of land use and traffic impact mitigation. | | | | | | | | • | |
| Biological Resources | | | | | | | | | |
| Impacts | | | | | | | | | |
| Sensitive species impacted via habitat modification, removal or riparian vegetation, or disruption of sensitive natural communities. | | • | • | • | | | • | • | • |
| Impacts to protected wetlands. | | • | | | | | | | • |
| Habitat fragmentation and interference with migratory corridors. | | | • | • | | | • | | • |

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| Mitigation Measures | | | | | | | | | |
| Coordinate with local interest groups, and state and federal agencies prior to land use conversion to ensure protection of habitat. | | • | | • | | | | • | |
| Develop and update a biological resources inventory. | | • | | | | | | • | |
| Improve downstream water quality and habitat | | • | | | | | | | |
| Require site specific, project-level mitigation. | | • | | | | | | | |
| Improve solid waste management to reduce litter that attracts predator species. | | | | | | | | | |
| Implement policies that preserve significant ecological areas, upland areas, open space, and natural biological communities. | | • | | • | | | • | • | • |
| Implement mining standards. | | | | | | | • | | |
| Establish conservation plans. | | • | | • | | | • | • | |
| Develop Significant Ecological Area/ Biological Resources Overlay. | | • | | • | | | • | • | |
| Protect wetland areas, vernal pools, drainages, and significant vegetation, such as Joshua tree. | | | | • | | | • | • | • |
| Develop and protect wildlife corridors and open space networks. | | • | • | | | | | • | • |
| Provide buffers between sensitive habitats and land use. | | | | • | | | | • | |
| Establish native vegetation for landscaping requirements. | | | | • | | | | | |
| Require development to obtain necessary CWA 401/404 permits from RWQCB or USACE. | | | | • | | | | | |
| Implement watershed protection, stormwater management, and discharge control ordinances to protect wetlands. | | | | • | | | | | |
| Implement policies in the Conservation Element. | | | | • | | | | | |
| Require compliance with the Biological Report Guidelines, which requires field surveys, literature review, anticipated impacts and mitigation, preservation and replacement of disturbed habitat at a minimum of 1:1 ratio, and compliance with applicable HCPs. | | | • | | | | | | |
| Cultural Resources | | | | | | | | | |
| Impacts | | | | | | | | | |
| Impacts to historical, archaeological, cultural, paleontological resources. | | | | | | • | | | • |
| Impacts to unique geologic features. | | | | | | | | | • |

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| Mitigation Measures | | | | | | | | | |
| Conduct field studies prior to development approvals. | | | | • | | • | | | |
| Require detailed mitigation plans to be incorporated into the project. | | | | • | | • | | | |
| Require contractors to retain a qualified archaeologist to be present onsite during ground disturbing activities and cease operations if a resource is discovered. | | | | • | | • | | | |
| Communicate with local tribes. | | | | • | | • | | | |
| Require site specific mitigation at a project-level as part of the discretionary review process | | | | | | • | | | • |
| Provide incentives through the Mill Act to encourage restoration, renovation, or adaptive use of historic resources. | | | | • | | | | | |
| Require inventory, monitoring, recovery and curation of found resources. | | | | • | | • | | | • |
| Ensure landmarking and historical listing of sites. | | | | • | | | | | |
| Develop management and restoration plans for identified and acquired properties with cultural resources. | | | | • | | | | | |
| Coordinate with Native American Heritage Commission, local tribal governments, and conduct SB 18 review. | | | | • | | | | | |
| Geology | | | | | | | | | |
| Impacts | | | | | | | | | |
| Increased risk from strong seismic ground shaking and other geologic and soil hazards including poor or erosion susceptible soil conditions, landslides, soil liquefaction, unconsolidated granular soils, and soil erosion when grading occurs on slopes and ridgelines. | • | | | | • | | | | |
| Increased risk from earthquake fault rupture. | • | | | | • | | • | | • |
| Increased risk from seismic groundshaking. | • | | | | • | | | | • |
| Increased risk from liquefaction. | | | | | • | | | | • |
| Increased exposure of people and structures to landslides. | | | | | • | | | | • |
| Soil erosion and loss of topsoil. | | | | | | | | | • |
| Risk from unstable soils. | | | | | • | | | | • |
| Construction impacts associated with shallow groundwater. | | | | | • | | | | |
| Risk to structures from subsidence and settlement of soils. | | | | | • | | | | |
| Mitigation Measures | | | | | | | | | |

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| Require soils engineering and soils performance review related to excavation activities. | • | | | | • | | | | • |
| Implement hillside management guidelines which may include grading restrictions. | • | | | | | | | | • |
| Use of appropriate building materials. | • | | | | | | | | |
| Require project specific mitigation related to liquefaction and landslide. | | | | | | | | | |
| Implement guidelines and programs defined in the Safety Element. | | | | | • | | • | | |
| Conduct a hazardous building inventory. | | | | | | | • | | |
| Require geologic investigation for new development. | | | | | • | | • | | • |
| Develop and/or comply with an emergency preparedness plan. | | | | | • | | • | | |
| Require compliance with state and local building, structural, and seismic codes. | • | | | | • | | • | | • |
| Hazards and Hazardous Materials | | | | | | | | | |
| Impacts | | | | | | | | | |
| Exposure of people and structures to wildland fire hazards. | | • | | • | | | | | • |
| Mitigation Measures | | | | | | | | | |
| Require proper siting of projects in high fire hazard areas to minimize fire vulnerability. | | • | | • | | | | | • |
| Require pre-approval analysis of land use compatibility to ensure that incompatible uses are not located adjacent to or proximate to sensitive receptors. | | • | | | | | | | • |
| Development in fire hazard areas must have most current and fire-safe building techniques and comply with building codes. | | • | | • | | | | | |
| Monitor post-fire debris flow hazard evaluation and prediction methods. | | • | | | | | | | |
| Monitor population growth and evaluate road capacities and hazard conditions along evacuation corridors to prepare contingency plans to correspond to the location, direction, and spread rate of wildfires. | | • | | | | | | | |
| Implement policies in the Safety Element. | | | | • | | | | | |
| Require brush removal and defensible space techniques. | | | | • | | | | | |
| Hydrology and Water Quality | | | | | | | | | |
| Impacts | | | | | | | | | |

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| Violation of water quality standards or impacts to surface or groundwater quality. | | | | • | | | | | • |
| Groundwater depletion. | | | • | • | | | • | • | |
| Alteration of drainage patterns or increased impervious surfaces resulting in erosion, siltation, flooding, and overland runoff. | | | | | | | | • | • |
| Impacts to stormwater drainage. | | | | | | | | | • |
| Risk to habitable structures and people located in dam inundation areas or due to dam/levee failure. | | | | | • | | | | |
| Inundation by seiche, tsunami, or mudflow. | • | | | | • | | | | |
| Mitigation Measures | | | | | | | | | |
| Provide incentives to maintain ground permeability, create flood control, preserve floodplains and open space, develop stormwater facilities, and comply with NPDES permits. | | | | • | • | | | | |
| Implement policies in the Conservation and Safety Elements. | | | | • | • | | | | |
| Implement groundwater monitoring, recharge, and recycling programs. | | | • | • | | | • | • | |
| Develop landscaping guidelines and require water conservation techniques. | | | | | | | • | | |
| Conduct water quality monitoring. | | | | | | | • | • | |
| Require compliance with Regional Water Quality Control Board standards. | | | | • | | | | | • |
| Require site specific mitigation at the project level. | | | | | | | | | • |
| Require future projects to be sited and designed to minimize impacts to absorption rates, drainage patterns, or rates of runoff. | | | | • | | | | | • |
| Require onsite infiltration, preserve natural drainage systems, direct concentrate flows into sedimentation basins, grassy swales, reduce impervious surfaces, and increase vegetation coverage. | | | | • | | | | | • |
| Implement a jurisdiction-wide urban runoff management plan. | | | | • | | | | | |
| Implement a watershed protection ordinance. | | | | • | | | | | |
| Encourage development that allows for maximum groundwater infiltration. | | | | • | | | | • | |
| Restrict development in flood plains. | • | | | | | | | | |
| Land Use | | | | | | | | | |
| Impacts | | | | | | | | | |

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| Disruption or division of community. | | | | | | | | | • |
| Conflict with plans and policies. | | | | | | | | | • |
| Conversion of open space and rural land. | | | • | | • | | • | • | |
| Conflict with existing land uses, land use patterns, and intensification of development in undeveloped areas. | | | | | • | | • | • | |
| Mitigation Measures | | | | | | | | | |
| Develop open space and parkland preservation programs and consider open space and parkland dedication | | | | | | | • | | |
| Encourage cluster development to reduce encroachment into open space. | | | | | | | • | • | |
| Use policies in the Land Use Element to address compatibility issues and ensure zoning consistency | | | | | • | | • | • | • |
| Update Community Plans to ensure consistency with the General Plan, environmental policies, and the Airport Land Use Plan. | | | | | | | | | • |
| Develop and adopt standards to reduce land use incompatibilities. | | | | | | | | | • |
| Consider land use compatibility, parking availability, truck delivery routes, noise limitations, open space, fire protection, and visual privacy for residential units in consideration of approval of mixed uses, land use conversion, and intensification of densities. | | | | | • | | | • | |
| Mineral Resources | | | | | | | | | |
| Impacts | | | | | | | | | |
| Loss of regionally, locally, and statewide important mineral resource availability. | | | | • | | | | | • |
| Mitigation Measures | | | | | | | | | |
| Require site specific mitigation at the project level. | | | | • | | | | | • |
| Noise | | | | | | | | | |
| Impacts | | | | | | | | | |
| Exposure of sensitive receptors to vehicular traffic noise. | | | | | | • | • | • | |
| Exposure of sensitive receptors to noise levels in excess of accepted standards. | | | | | | • | | | • |
| Exposure of sensitive receptors to ground-borne vibration. | | | | | | • | | | |
| Stationary noise sources. | | | | • | • | | | | • |

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| Periodic temporary or permanent increase in ambient noise levels. | | | | • | | • | | • | • |
| Exposure of sensitive receptors to excess noise levels from airports. | | | | | | • | • | | • |
| Exposure of sensitive receptors to railroad noise. | | | | | | | • | | |
| Mitigation Measures | | | | | | | | | |
| Implement policies in the Noise Element. | | | | • | | • | • | | |
| Require acoustical analysis reports to determine land use compatibility. | | | | • | | • | • | | • |
| Require review by the Airport Land Use Commission. | | | | | | • | • | | • |
| Require future projects to incorporate architectural features to reduce indoor noise levels. | | | | | | • | | | • |
| Require all non-emergency construction and land uses to comply with state and local limits. | | | | • | • | • | | • | • |
| Require compliance with state and local building codes | | | | | • | • | | | |
| Vibration sensitive land uses adjacent to railroads must comply with Federal Transportation Administration standards. | | | | | | • | | | |
| Require development to comply with Caltrans noise abatement policies and construct sound walls in residential areas adjacent to city freeways. | | | | • | • | | | | |
| Require project design considerations to promote traffic calming, traffic control measures, and measures to minimize vehicular traffic. | | | | • | | | | | |
| Require buffer zones between incompatible land uses. | | | | • | | | | • | |
| Population and Housing | | | | | | | | | |
| Impacts | | | | | | | | | |
| Deficiencies in the jobs/ housing balance. | | | | | | | • | | |
| Displacement of housing and need for replacement housing. | | | | | | | | | • |
| Increased rate of increase for the number of persons per dwelling, alteration of housing mix, and lack of affordable housing. | | | | | • | | | | |
| Mitigation Measures | | | | | | | | | |
| Develop strategies to address the jobs/ housing balance, such as approving future annexations or encouraging residential and non-residential development to occur at a similar rate. | | | | | | | • | | |

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| Develop new housing development ordinance, condominium conversion standards, first time homebuyer incentives, mortgage revenue bonds, mobile home rent control, neighborhood quality improvement programs, senior housing programs, and habitability standards. | | | | | • | | • | | |
| Require project level review to develop appropriate mitigation. | | | | | | | | | • |
| Implement policies to meet existing and future needs and distribute housing according to demand. | | | | | • | | | | |
| Encourage rehabilitation, revitalization, and restoration of deteriorated buildings and neighborhoods. | | | | | • | | • | | |
| Develop housing types for all levels of income. | | | | | • | | • | | |
| Public Services | | | | | | | | | |
| Impacts | | | | | | | | | |
| Increased physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for public services, including fire protection, police protection, schools, libraries, and medical facilities. | | | | • | | | | | • |
| Mitigation Measures | | | | | | | | | |
| Determine the need and potential funding sources for additional facilities and services. | | | | | | | | | • |
| Mitigate for physical impacts associated with new or expanded facilities, as listed by resource section. | | | | | | | | | • |
| Review plans for new or expanded school facilities. | | | | • | | | | | |
| Plan and site schools that are context specific according to the location and need. | | | | • | | | | | |
| Coordinate with school districts to encourage siting new facilities in accordance with General Plan and include feasible mitigation to reduce physical impacts. | | | | • | | | | | |
| Require discretionary project applications to include commitments from available school districts. | | | | • | | | | | |
| Recreation | | | | | | | | | |
| Impacts | | | | | | | | | |
| Impacts from expanded or new recreational facilities. | | | | | | | | | • |
| Mitigation Measures | | | | | | | | | |

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| Apply mitigation identified for resource specific impacts. | | | | | | | | | • |
| Traffic and Transportation | | | | | | | | | |
| Impacts | | | | | | | | | |
| Increased traffic load, vehicle trips, congestion, and volume to capacity ratio. | | | | • | | | • | | • |
| Exceedance of roadway level of service. | | | • | • | | • | • | | • |
| Contribution to traffic congestion in surrounding areas. | | • | | • | | | | | |
| Altered air traffic patterns. | | | | | | | • | | |
| Increased hazards from design features or incompatible land use. | | | | • | | | | | |
| Inadequate parking capacity. | | | | | | | | | • |
| Increased demand and use/ deterioration of public transit, commercial air service, bicycle routes, equestrian trails, and truck routes. | | | | | | | • | | |
| Mitigation Measures | | | | | | | | | |
| Strive to achieve LOS D on roadways within the jurisdiction. | | • | | | | | | | |
| Implement policies in the Circulation Elements and implement transportation management programs. | | • | • | • | | • | • | | • |
| Provide alternative transportation. | | • | • | | | | | | |
| Work with adjacent jurisdictions to maximize roadway capacity across jurisdictional boundaries. | | • | | • | | | | | |
| Coordinate with Caltrans, and local councils of government to define fair share mitigation for impacts. | | • | | • | | | | | |
| Install signalized street lights. | | | | | | | • | | |
| Upgrade arterial streets. | | | | | | | • | | |
| Implement the Walkable Communities Program. | | | | | | | | | • |
| Develop programs to address street and freeway systems, bicycling and pedestrian networks, parking, and transportation demand. | | • | | | | | | | • |
| Extend public transportation to major land uses, such as airports. | | • | | | | | | | |
| Promote land use patterns that center around public transit facilities. | | • | | | | | | | |
| Install synchronized signalization. | | • | | | | | | | |
| Limit truck traffic and/or obtain additional right-of-way to accommodate right and left turn lanes at major intersections. | | • | | | | | | | |

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| Require large projects to mitigate impacts to traffic networks. | | | • | • | | | | | |
| Public Services and Utilities | | | | | | | | | |
| Impacts | | | | | | | | | |
| Inadequate water supplies. | | | • | • | | | | • | |
| Exceedance of landfill capacity resulting from increased solid waste. | | | | • | | | | | |
| Violation of AB 32 standards. | | | | • | | • | | | • |
| Increased risk from climate change. | • | | | • | | • | | | |
| Mitigation Measures | | | | | | | | | |
| Require discretionary approval applications to include commitments from available water and sanitation districts. | | | | • | | | | | |
| Require new development that meets certain size or occupancy parameters to prepare a water supply assessment that consists of information regarding project water demand, supply alternatives, evaluation of compliance with the UWMP, and conservation techniques. | | | • | | | | | | |
| Utilize alternative waters sources. | | | | | | | | • | |
| Estimate future water demands and study the feasibility of reclaiming water. | | | | | | | | • | |
| Require compliance with applicable urban water management plans. | | | • | | | | | | |
| Condition approval on consistency with General Plan policies and approval of land use that is consistent with long-term sustainability of groundwater supplies. | | | | • | | | | | |
| Coordinate land use planning with local water supply agencies. | | | | • | | | | | |
| Require innovative design, construction, and operation to reduce storm water pollution, energy use, and waste generation. | | | | | | • | | | • |
| Offer incentives (i.e. expedited permit review) for projects that achieve LEED silver certification. | | | | • | | | | | • |
| Implement water and energy conservation measures beyond those required by the state through review of project siting, land use, and design that could reduce vehicle miles traveled. | | | | • | | • | | | • |
| Encourage development to use passive cooling techniques (i.e., Tree shading). | | | | | | | | | • |

| Resource Area/ Impact | Counties[a] | | | | Cities | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Los Angeles County[b] | San Bernardino County[c] | Riverside County[d] | San Diego County[e] | City of Los Angeles[f] | City of Ontario[g] | City of Palmdale[h] | City of Hesperia[i] | City of San Diego[j] |
| Prepare a Climate Action Plan which will include a greenhouse gas inventory, quantification of an emission reduction target, and a list of local emission reduction measures (i.e., requiring municipal fleets to be fuel efficient, installing LED traffic lights, conducting energy efficiency audits for municipal buildings). | | | | • | | • | | | |
| Develop a Sustainable Communities Strategies Plan and participate in the County of San Bernardino Green Valley Initiative. | | | | | | • | | | |
| Update the local Green Building Program to provide incentives and education. | | | | • | | | | | |
| Work with local councils of government to reduce greenhouse gas emissions associated with land use and transportation. | | | | • | | | | | |
| Require commercial and industrial recycling and expand recycling and composting programs for residences. | | | | | | | | | |
| Coordinate with energy providers to consider and develop a mitigation credit program. | | | | • | | | | | |
| Source:<br>a<br>b<br>c<br>d<br>e<br>f<br>g<br>h<br>i | | | | | | | | | |



## Secondary Impacts of Growth – Other Considerations

Some of the General Plan EIRs used to characterize secondary effects of growth are over [##] years old; these documents can not reflect changes that have occurred subsequent to publication. Changes in the physical environmental setting could include identification of an endangered species or other protected resource in an area subsequent to EIR preparation. Changes in the regulatory context for evaluating impacts to resources occur over time and can alter the way lead agencies determine impact significance and mitigate significant impacts. Increased concern over climate change led to the passage of AB 32 and subsequent changes to the evaluation and mitigation of impacts associated with greenhouse gas emissions. Project-specific EIRs on new development will consider direct, indirect and cumulative contributions of projects on resources in the context of these changes in the physical and regulatory environment and identify measures to mitigate these effects. In addition,

state policies encouraging compact and sustainable development (presented in Section 30.2.3.4) will influence local land use planning and development, promoting strategies to reduce sprawl, preserve farmland, and support the viability of public transportation, and likely lessening the overall impacts of newer development on the environment.

## 30.3.6 Authority to Mitigate Effects of Growth

As described in Section 30.2.2, the authority to regulate growth, and by extension to mitigate the environmental effects of growth, resides primarily with land use planning agencies. Neither DWR or Reclamation nor the contractors are land use planning agencies and, consequently, do not have the authority to approve or deny urban development within the study area or to impose mitigation for the environmental consequences of such development. Section 30.2.3 summarizes DWR and Reclamation's responsibilities regarding water supply planning. Regarding DWR's authority to and role in facilitating demand reduction (thereby lessening the environmental effects of water supply development attributable to urban growth), refer to __ [**Note to reviewers: consistent with your direction, we will make sure that this text discusses (a) the limits of DWR's authority and ability to address / mitigate the effects of growth and list what DWR is doing to reduce demand and in effect mitigate; and (b) the roles of other agencies with authority to plan and mitigate for growth and review of what they are doing on this front.]**

**Table 30-32** identifies agencies with the authority to implement measures to avoid or mitigate the environmental impacts of growth in the study area; the agencies generally fall into two categories, as discussed below:

- Agencies with primary authority over land use planning and CEQA lead agency status for approval of land us plans, permits and other approvals; and
- Agencies responsible for stewardship of environmental resources.

**Table 30-32. Agencies with the Authority to Implement or Require Implementation of Measures to Avoid or Mitigate for Growth-Related Impacts**

| Agency | Authority |
|---|---|
| **Planning Agencies** | |
| Counties within the Study Area | ***Planning and Enforcement.*** Responsible for planning, land use, and environmental protection of unincorporated areas and adoption of the general plan governing unincorporated county lands. Responsible for enforcing County environmental policies through zoning and building codes and ordinances. Refer to Section 30.2.2 for additional information.<br>***CEQA.*** Counties typically act as the lead agency for CEQA compliance for development projects in unincorporated areas; as such they bear responsibility for adopting measures to mitigate the project's significant direct and indirect impacts on the environment and programs to ensure that mitigation measures are successfully implemented. |
| Cities within the Study Area | ***Planning and Enforcement.*** Responsible for planning, land use, and environmental protection of the area within the city's jurisdictional boundaries and adoption of the general plan governing this area. Responsible for enforcing County environmental policies through |

| Agency | Authority |
|---|---|
| | zoning and building codes and ordinances. Refer to Section 30.2.2 for additional information.<br>***CEQA.*** Cities typically act as the lead agency for CEQA compliance for development projects in incorporated areas; as such they bear responsibility for adopting measures to mitigate the project's significant direct and indirect impacts on the environment and programs to ensure that mitigation measures are successfully implemented. |
| Local Agency Formation Commissions | Empowered to approve or disapprove all proposals to incorporate cities, to form special districts, or to annex territories to cities or special districts. Also empowered to guide growth of governmental service responsibilities. |
| California Coastal Commission | Under the California Coastal Act, regulates the use of land and water within the coastal zone. Under the federal Coastal Zone Management Act, exercises federal consistency review authority over all federal activities and federally licensed, permitted or assisted activities that affect coastal resources. |
| San Francisco Bay Conservation and Development Commission | A state agency responsible for regulating development adjacent to San Francisco Bay. Under the federal Coastal Zone Management Act, exercises federal consistency review authority over all federal activities and federally licensed, permitted or assisted activities that affect resources within the San Francisco Bay segment of the California coastal zone. |
| NEPA Lead Agencies | Certain NEPA lead agencies (such as the U.S. Army, U.S. Air Force, and U.S. Navy) oversee the development or redevelopment of federal properties and through NEPA have authority to impose mitigation. |
| **U.S. Environmental Protection Agency** | Responsible for writing regulations and setting national standards to implement a variety of federal environmental protection and human health laws. In California, EPA has delegated much of the authority to enforce the Clean Air Act, Clean Water Act and Drinking Water Quality Act to state agencies while retaining some oversight. EPA also comments on the environmental review of projects through its participation in the NEPA process. |
| **Water Resources** | |
| State Water Resources Control Board (SWRCB)[a] | Shares responsibility with the RWQCBs to protect and restore water quality; approves regional basin plans; provides administrative and other support to regional boards; and administers surface water rights. Develops water quality control plans and polices in certain instances where water quality issues cross regional boundaries or have statewide application. |
| Regional Water Quality Control Boards (RWQCBs)[a]: San Francisco Bay, Central Valley, Lahontan, Central Coast, Los Angeles, Santa Ana, San Diego, Colorado River | Share responsibility with SWRCB to protect and restore water quality. Formulate and adopt water quality control plans. Implements portions of the Clean Water Act when EPA and SWRCB delegate authority, as is the case with issuance of NPDES permits for waste discharge, reclamation, and storm water drainage. |

| Agency | Authority |
|---|---|
| California Department of Public Health | Responsible for the purity and potability of domestic water supplies. Assists SWRCB, RWQCBs in setting quality standards. |
| U.S. Army Corps of Engineers | Issues permits to place fill in waterways pursuant to Section 404 of the Clean Water Act. |
| **Air Resources** | |
| California Air Resources Board[a] | Responsible for adopting and enforcing standards, rules, and regulations for the control of air pollution from mobile sources throughout the state. |
| Air Pollution Control Districts[b] and Air Quality Management Districts[c] | Adopt and enforce local regulations governing stationary sources of air pollutants. Issue Authority to Construct Permits and Permits to Operate. Provide compliance inspections of facilities and monitor regional air quality. Develop Clean Air Plans in compliance with the Clean Air Act. Publish guidelines to guide lead agencies in evaluating and mitigating air quality impacts. |
| **Biological Resources** | |
| National Oceanic and Atmospheric Administration National Marine Fisheries Service | Requires consultation under Section 7 or Section 10 of the Endangered Species Act for projects which could potentially impact endangered or threatened species under the purview of National Marine Fisheries Service. |
| U.S. Fish and Wildlife Service | Requires consultation under Section 7 or Section 10 of the Endangered Species Act for projects which could potentially impact endangered or threatened species. Prepares biological opinions on the status of species in specific areas and potential effects of proposed projects. Approves reasonable and prudent measures to reduce impacts and establishes Habitat Conservation Plans. |
| California Department of Fish and Game | Issues Stream Bed Alteration Agreements for projects potentially impacting waterways. Issues incidental take permits for projects that would result in the take of species listed the California Endangered Species Act if specific criteria are met. |

[a] These agencies fall under the umbrella of the California Environmental Protection Agency

[b] Air Pollution Control Districts within the study area include: Siskiyou County, Modoc County, Lassen County, Tehama County, Glenn County, Colusa County, Placer County, Northern Sonoma County, Amador County, Calaveras County, Tuolumne County, San Joaquin Valley Unified, Mariposa County, Monterey Bay Unified, Kern County, San Luis Obispo County, Santa Barbara County, Ventura County, San Diego County, Imperial County, El Dorado County, Great Basin Unified

[c] Air Quality Management Districts within the study area include: North Coast Unified, Shasta County, Northern Sierra, Butte County, Mendocino County, Feather River, Lake County, Yolo-Solano, Bay Area, Sacramento Metropolitan, Antelope Valley, South Coast, Mojave Desert.

SOURCE: ESA [year?].

### 30.3.6.1 Implementation of Environmental Protection Measures by Land Use Planning Agencies

Cities and counties (for unincorporated areas) have the greatest authority over land use decisions within their jurisdictions through implementation of their general plans (as described in Section 30.2.2), locally adopted ordinances and regulations to regulate growth, and development approval processes. Some ordinances and policies adopted at the local level (e.g., ordinances establishing urban growth limit lines, protecting natural resources such as riparian habitat, or establishing resource conservation easements) are intended to avoid or reduce environmental impacts.

In their capacities as lead agencies under CEQA, cities and counties also have the authority and responsibility to evaluate the environmental impacts that would result from implementation of plans and individual development projects within their jurisdictions, and to adopt measures to mitigate any significant adverse impacts. Cities and counties are required to identify mitigation measures in CEQA documents on these plans and projects, and to adopt feasible measures within their authority, as well as programs to monitor and report on their implementation, as conditions of approval. The CEQA Guidelines and guidelines published by state and regional resource protection agencies regarding CEQA implementation are periodically amended to reflect major policy shifts in environmental protection, such as the adoption AB 32, the Global Warming Solutions Act of 2006 (described in Section 30.2).

The California Coastal Commission and the San Francisco Bay Conservation and Development Commission also exercise authority over land uses within the coastal zone and areas adjacent to San Francisco Bay, respectively, and can impose measures to mitigate adverse environmental effects of development within their jurisdictions through their approval processes.

### 30.3.6.2 Implementation of Environmental Protection Measures by Resource Management Agencies

Mitigation of impacts relating to specific resources categories generally falls under the responsibility of resource-specific agencies at the federal, state, and regional levels through permitting and related regulatory processes summarized in Table 30-32. Through their permitting authority these agencies mitigate the impacts of proposed land uses and enforce the provisions of adopted resource protection plans (e.g., water basin plans and air basin plans). For example, regional water quality control boards identify specific requirements and water quality standards for facilities through issuance of waste discharge requirements and local air districts mitigate the effects of pollutant emissions through issuance of permits to construct and operate stationary sources of air emissions.

## 30.3.7 Conclusions

The project would not directly contribute to the creation of additional housing or jobs within the study area as it is limited to the provision of water supply infrastructure. However, the project would indirectly support growth by removing an obstacle to growth enabling growth under the approved General Plans within the study area to occur. As identified by these local jurisdictions and summarized in **Table 30-32,** some of these impacts would remain significant and unavoidable.

**Note to reviewers: the final significance determination for the project potential to induce growth will be made once the modeling results are provided and the analysis is complete**

**based on the results. The modeling results were not available for this submittal but the information and the analysis will be completed for the second administrative draft.**

**This section will reiterate key points in the analysis and conservative assumptions made that may result in an overstatement of the project's growth inducement potential, such as the following:**

Note that this analysis conservatively assumes that those contractors serving M&I uses that would receive an increase in average annual deliveries would allocate the new water to urban growth rather than for other purposes; this is an assumption, not a certainty. Some contractors that receive additional SWP or CVP water may instead choose to use some or all of it for purposes other than to supply new residents, such as for groundwater overdraft protection, to improve the reliability of their dry-year supplies for existing water users, or for agricultural or environmental uses. If the additional water is not used to serve new development then proposed project would not contribute to the environmental effects of growth.